1. Nasotracheal vs Orotracheal Intubation and Post-extubation Airway Obstruction in Critically Ill Children: An Open-label Randomized Controlled Trial (Conference Abstract ID: ABS0001)

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Aim and objectives: The data on long-term nasotracheal intubation among mechanically ventilated critically ill children are limited. The purpose of this study was to compare the rate of post-extubation airway obstruction (PEAO) with nasotracheal and orotracheal intubation. Materials and methods: This open-label randomized controlled trial was conducted in the PICU of a tertiary care and teaching hospital in North India from January to December 2020 involving intubated children aged 3 months to 12 years. After written informed consent, children were randomized into nasotracheal and orotracheal intubation groups. Post-extubation, modified Westley’s group score (mWCS) was used at 10-timepoints (0 minutes, 30 minutes, 1, 2, 3, 6, 12, 24, 36, and 48 hours after extubation) to monitor for PEAO. The primary outcome was the rate of PEAO; and secondary outcomes were time taken for intubation, number of intubation attempts, complications during intubation, unplanned extubation, repeated intubations, tube malposition/displacement, endotracheal tube blockage, ventilator-associated pneumonia, skin trauma, extubation failure/re-intubation, duration of PICU stay, and mortality. Results: Seventy children were randomized into nasotracheal (n = 30) and orotracheal (n = 40) groups. Both the groups were similar in baseline characteristics. The rate of PEAO was similar between nasotracheal and orotracheal groups (10% vs 20%, p = 0.14). The maximum mWCS and mWCS at 10-timepoints were similar in the two groups. The time taken for intubation was significantly longer (85 seconds vs 48 seconds, p < 0.001) in the nasotracheal group, whereas other secondary outcomes were similar in the two groups. Conclusion: The rate of PEAO was not different between nasotracheal and orotracheal groups. Trial registration number and date: CTRI/2020/01/022988, January 27, 2020.

2. Prognostic Role of Different Severity Indexes in COVID-19 Pneumonia: A Retrospective Study (Conference Abstract ID: ABS0002)

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Aim and background: Approximately 50% of the COVID-19 patients require intensive care due to pneumonia and respiratory failure. The CURB-65, CRB-65, A-DROPS score, and Pneumonia Severity Index (PSI) scoring systems are established prognostic tools for community-acquired pneumonia (CAP). Similarly, the qSOFA score is a prognostic tool for critically ill patients. However, the utility of these scoring systems in the context of COVID-19 is yet to be established as a predictive tool for triage by means of rapid decision-making and preventive measures to combat the ongoing pandemic. Materials and methods: This observational, retrospective cohort study was conducted AIIMS, New Delhi during May to June, 2021 after obtaining institutional ethical committee approval (IEC-860/4.9.2020). Only the RT-PCR-proven patients >18 years among the institutionalized patients with severe acute respiratory infections (SARI) were included. Results: Out of the 235 included patients, 27.2% of patients required mechanical ventilation, and the overall period of hospital stay was 9 (5–13) days. While the SMART COP score with an AUC of 0.812 (95% CI 0.752–0.871), the PSI score with an AUC of 0.819 (95% CI 0.762–0.877) obtained significant results for mortality, the A drop score with an AUC of 0.92 (0.897–0.954), and both the PSI (AUC of 0.964; 95% CI 0.928–1.000), and the SMART COP (AUC of 0.925; 95% CI 0.887–0.962) acquired the best result for intubation and thereby requirement of mechanical ventilation. Conclusion: Although the outcome of COVID-19 depends upon multiple factors the SMART COP, PSI, and A-drop scoring systems seem to be promising predictive tools for morbidity and mortality.

3. Prognostication of the Outcomes in Patients on Mechanical Ventilation Due to Severe ARDS in COVID-19 Using Neutrophil to Lymphocyte Ratio (NLR) at Admission (Conference Abstract ID: ABS0003)

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Background: The neutrophil-to-lymphocyte ratio (NLR) has been used as a circulating biomarker to determine the prognosis of inflammatory reaction in many conditions. Inflammation has an important role in the progression of COVID-19. NLR has proved to be potentially useful in diagnosing and prognosis of COVID-19 patients. Aim: To determine whether NLR is useful for the prognostication of outcomes in patients on mechanical ventilation due to severe ARDS in COVID-19. Materials and methods: This is a prospective study in which patients of both genders between age 18 and 78 years with severe ARDS due to COVID-19 who required mechanical ventilation within 1st 3 days of admission were included. CBC was done on 1st day of admission for calculation of NLR. The outcome was defined as in-hospital mortality. Pregnant patients, patients on steroids, and immunosuppression therapy and immune-compromised patients were excluded from the study. Results: Statistical analysis was done using Mann–Whitney, Pearson, and Chi-Square tests. 135 patients who required mechanical ventilation within the first 3 days of admission were included. 34 (25.1%) patients were females and 101 (74.81%) patients were males. 49 (36.29%) patients survived and 88 (63.70%) patients died. The median of NLR in alive 11.10 (1.18–48) and dead 11.05 (1.55–48) was statistically insignificant (P value 0.71). The comparison of NLR in males (14.37 ± 5.74) and females (10.76 ± 5.74) was statistically significant (p = 0.05). The mortality in females was 70.58% whereas in males it was 61.38%. As per the Person correlation test, there is a negative correlation of NLR with age and gender to determine mortality. Conclusion: NLR is not a good biomarker to predict the outcomes of patients on mechanical ventilation due to severe ARDS in COVID-19 disease. Though the NLR values were lower in females, the mortality was higher in the female group.
ABSTRACTS CRITICARE – IJCCM2022

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Aim and objective: Monoclonal antibody for emergency COVID exposure treatment.

Materials and methods: For the treatment of mild to moderate COVID-19 in adults and pediatric patients (12 years of age and older weighing at least 40 kg) with laboratory-confirmed SARS-CoV-2 infection who are at high risk of severe COVID-19 and do not require oxygen. Dose casirivimab and imdevimab is approved at a combined dose of 1200 mg (600 mg of each drug) administered by intravenous infusion or subcutaneous route. US-FDA EUA Approval. DGCI (CDSCO) Restricted use in an Emergency situation. We have used it in a high-risk case. 1. Age >60 years. 2. Obesity. 3. Cardiovascular disease, including hypertension.

4. Monoclonal Antibody for COVID Treatment (Conference Abstract ID: ABS0004)

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Figs 1A and B: (A) The area under the curve for different scores to mortality; (B) The area under the curve for different scores to the requirement of intubation.
4. Chronic lung disease, including asthma. 5. Type 1 and type 2 diabetes mellitus. 6. Chronic kidney disease, including those on dialysis. 7. Chronic liver disease. 8. Immunosuppressed. **Results**: Evidence Summary: Interpretation: 70% relative risk reduction in COVID-19 — related hospitalizations or all-cause death in participants who received CAS 600 mg plus IMD 600 mg compared to those who received placebo. 71% relative risk reduction in COVID-19 related hospitalization and all-cause death in participants who received CAS 1200 mg plus IMD 1200 mg compared to those who received placebo. Administration intravenous infusion with 0.2 micron filter 50 ns 180 mL/hour in 20 minutes 600 mg casirivimab and 600 mg imdevimab as a single infusion. **Conclusion**: 1. India is currently seeing the COVID-19 third wave majority of patients develop mild to moderate disease. 2. Casirivimab and imdevimab are recombinant human IgG1 monoclonal antibodies that bind to spike protein of COVID-19 and reduce viral replication. Cocktail is effective against variants and reduced the viral escape. The cocktail will aid in reducing the risk of hospitalization and death in patients with mild to moderate COVID-19 disease who are at risk of progression to severe disease.

5. Post-COVID Double Valve and Bypass Surgery One of 1st in World (Conference Abstract ID: AB50005)

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**Aim and objective**: Post COVID double valve and bypass surgery in Covid pandemic. **Materials and methods**: We have done 260 cardiac surgery in our hospital out of which 10 case are post COVID case 8 case CABG I case CABG and DVR and one case MVR. All cases we have done 6 weeks after COVID report negative. We have a bundle of pre anaesthesia investigations for all patients, RT PCR negative report, CPP, ESR SGOT SGPT PTI total protein urea creatine HB TLC DLC platelet count MCV C MCH COK MB TROP HI ECG X-ray chest CT scan – chest echo angiography and complete systemic body evaluation by team of cardiac anaesthesiologist all CABG we have done on beating heart DVR and CAGB on cardiopulmonary bypass all case discharge on 8th day there is no mortality in all our case in non- COVID CABG we got to post bypass surgery patient become positive one PT we lost she was 75-year-old female on 23rd day. We recommend for all cardiac surgery patients should undergo complete PAC and beating heart surgery for coronary artery surgery and all team member should use COVID precaution protocol.

**Results**: We have done total 260 cardiac surgery from may 2020 till August 2021 10 case are post COVID 8 case CABG and 1 mitral valve surgery 1 case double valve surgery and bypass surgery one of 1st in world all post COVID patient discharge on 8th day no mortality in our post COVID case out of 260 cardiac case two patient become covid positive one patient we lost. We advise post-COVID case we should do cardiac elective case 6 week after COVID negative report and complete PAC is very important and every one take all COVID preventive protocol every time. **Conclusion**: All post COVID case we should do cardiac surgery 6 week after COVID complete PAC evaluation is very important every time COVID prevention protocol for every in hospital for coronary artery bypass surgery beating heart surgery is safe technique.


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**Aim and objective**: Non-invasive fluid management in COVID shock patient in ICU. **Materials and methods**: Our hospital use sterling stroke volume-guided fluid management for COVID shock patients. In the University of Kansas health system evaluated 200 cases for stroke volume (sv) guided fluid resuscitation this study showed ICU length of stay reduced by 2.89 days, risk of mechanical ventilation reduced by 51%, initiation of acute dialysis therapy reduced by 13.2%, this system saves an estimated $14498 per treated patient this system use Bioreactance technology to measure sv in shock patient in two sensor place above the heart and two below the heart and continue measurement of sv done in 48 seconds. Validation studies over 500 patient published clinical studies result are same all major technologies (Swan Ganz, pulse contour, Doppler, fick) and over 100 peer-reviewed publications are there. This technique is 100% non-invasive accurate flexible—this sterling system use PLR or bolus test for sv management we are using in emergency for our Rapid Response Team in MICU OT for perioperative fluid management and all surgical ICU. **Results**: 1 ICU length of stay reduced by 2.89 days 2 risk of mechanical ventilation reduced by 51% 3 initiations of acute dialysis therapy reduced by 13.5% 4 save an estimated $14498 per treated patient. **Conclusion**: Sterling monitoring platforms use unique, patented Bioreactance technology to take measures continuously and precisely, and they require only four easy to place sensor pads. The sensors can be— anywhere on the chest two above the heart and two below the heart to create a box around the heart we advise sterling stroke volume guided fluid management in emergency medical ICU surgical ICU and perioperative and RRT for accurate fast and 100% non-invasive technique for COVID patient.

8. Terlipressin-induced Skin Necrosis (Conference Abstract ID: AB50008)

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A 54-year-old chronic alcoholic presented with complaints of jaundice for 1 month and abdominal distension for 20 days. He also complained of decreased urine output for the last 3 days. He had no significant family history or comorbidities. Clinically he was icteric, had hepatosplenomegaly and moderate ascites on abdomen examination. Investigations revealed serum creatinine of 3.62 mg/dL with serum total bilirubin of 36.6 mg/dL and International Normalized Ratio (INR) of 1.8. The patient also had hypalbuminemia (1.8 g/dL). He was started on albumin infusion (1 g/kg) despite which he had progressive acute kidney injury (AKI), hence started on terlipressin 2 mg intravenously every 4 hour. On the third day of therapy, we noticed bilateral erythematous non-blanching lesions and ecchymosis in both lower limbs which progressed to necrosis.
References


9. Safety, Feasibility, and Outcome of Percutaneous Dilatational Tracheostomy in Critically Ill COVID-19 Patients (Conference Abstract ID: ABS0009)

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Aim and background: Percutaneous dilatational tracheostomy (PDT) may improve outcomes in critically ill COVID-19 patients on mechanical ventilation. However, the timing of performing tracheostomy may be controversial and it is an aerosol-generating procedure with potential risk for viral exposure to the healthcare workers. Materials and methods: An operational protocol for performing PDT was made and subsequently followed in a designated COVID-19 ICU. Critically ill adult patients on a mechanical ventilator who underwent PDT were included in this retrospective cohort study. Case files were retrospectively reviewed and patient characteristics, clinical outcome, and procedure-related details were noted. Results: Forty-one patients were included in the analysis. The median age was 49 years, and 41.5% of patients were females. The median duration of mechanical ventilation before tracheostomy was 10 (8–16) days and the median (IQR) PaO2/FiO2 ratio on the day of PDT was 155 [125–180] mm Hg. 48.8% of patients had transient desaturation to SpO2 <90%. 41.5% survived ICU discharge. None of the health care providers involved developed any symptoms of COVID-19. Conclusion: Early PDT may improve outcomes in critically ill COVID-19 patients and should be considered safe for health care providers. Keywords: Coronavirus disease 2019, Mechanical ventilation, Percutaneous dilatational tracheostomy.

and bullae formation over 2 days (Fig. 1). Doppler US demonstrated normal arterial and venous blood flow. A diagnosis of terlipressin-induced necrosis was made and terlipressin was stopped. There was regression of lesions and signs of healing. Punch biopsy revealed non-specific inflammation extending from the dermis into the subcutaneous tissue and vascular congestion (Fig. 2). Terlipressin is a synthetic long-acting analogue of vasopressin, which is widely used in the treatment of cirrhotic patients with hepatorenal syndrome and variceal bleeding. Although it causes a vasoconstrictive effect specifically on splanchnic circulation, a similar effect can be seen in the systemic circulation. Vasoconstrictor effects on the systemic circulation result in ischemic complications in <5% of cases. In similar previously reported cases, the complication evolved after a few days of treatment thus indicating a dose-related effect.1,2 Although ischemic complication with terlipressin is rare, it should be detected earlier. Keywords: Terlipressin, Critical care, Skin necrosis

Fig. 1: Bilateral erythematous non-blanching lesions and ecchymosis with which necrosis and bullae in both lower limbs.

Fig. 2: Histopathology showing non-specific inflammation extending from the dermis into the subcutaneous tissue and vascular congestion.

Fig. 2:

Histopathology showing non-specific inflammation extending from the dermis into the subcutaneous tissue and vascular congestion.
10. Cisatracurium for Orgen Failure Patient in ICU (Conference Abstract ID: ABS0010)
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DOI: 10.5005/jp-journals-10071-23712A.10

Aim and objective: Cisatracurium use in orgen failure patient.

Materials and methods: We use cisatracurium in 50 case of Renal and Hepatic failure patient on ventilator. Cisatracurium is acis isomer of atracurium besilate. It is a non depolarizing neuromuscular blocker acts by competitive antagonism. It undergo Hofmann elimination to form laudanosine and the monoquaternary acrylate metabolite. The time to maximum block is up to 2 minutes. Adverse reaction are bradycardia, hypotension and rash and muscle wekness. Cisatricle is cardiac safe low dose require, safe in renal and hepatic failure and more potant. Results: Cisatracurium is safe in renal and hepatic failure dose we use initial dose 3 micro/kg/minute and to 2 micro/kg/minute maintenance rate no dose adjustment is needed in renal and hepatic failure. Plasma laudanosine – concentration is five to ten times lower hance cn safe drug. Hemodynamic stability due to less histamine relee. Beneficial in asthamatic patient. Conclusion: We recommend Cisatrecrum in renal and hepatic failure patient with above dose. Cisatracurium is Hemodynamic stable. Good Safety Profile beneficial in asthamatic patient predictable recovery from neuromuscular block. Unique orgen – independent elimination and safe to use muscle relaxant in orgen failure in ICU. Time on onset is 120 seconds time to 90% block is 2.3 minutes time to maximum block 55 minutes dose 0.03 mg/kg for maintenance in ICU in renal and hepatic failure patient. More potent heamodynamic stable patient good safety profile beneficial for asthamatic patient and Unique orgen – independent elimation.

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Introduction: Tension pneumomediastinum is a condition in which there is a trapping of air in the mediastinum with a resultant increase in the pressure causing compression of the great vessels which leads to decreased venous return and cardiovascular collapse. It is a rare and severe form of pulmonary barotrauma in ICU ventilated patients which can lead to refractory hypotension and death if not addressed at the right time. Case description: A 42-year-old man with no known comorbidities referred to our centre in view of severe COVID ARDS with refractory hypoxemia. Endotracheally intubated and put on ventilatory support. Developed shock not responding to fluid resuscitation and was started on IV vasopressor infusion. CT chest revealed tension pneumomediastinum. The patient continued to worsen clinically with hypotension and hypoxia despite low PEEP and high FiO2 ventilation. So bedside USG-guided pigtail catheter was inserted into the anterior mediastinum using a modified Seldinger technique following which there was a rapid clinical improvement. Conclusion: Tension pneumomediastinum is a rare and life-threatening cause of refractory hypotension and hypoxia in mechanically ventilated ARDS patients and bedside ultrasound-guided intervention is a feasible and quick therapeutic option. Highlights: A review of the literature showed very few case reports of tension pneumomediastinum in mechanical ventilated ARDS patients. Because ultrasound of the chest gives air artefacts and poor visualization in patients with pneumomediastinum and subcutaneous emphysema, CT-guided drainage catheters insertion is the standard of care. But in a very sick ICU patient, bedside ultrasound-guided catheter insertion could be a safe and immediate measure to save a patient’s life. To our knowledge, this is the first case report of an adult ARDS patient with tension pneumomediastinum managed with bedside ultrasound-guided catheter insertion. Keywords: COVID-19 pneumonia, Mediastinal drain, Tension pneumomediastinum.

12. Is there Association between Trends of Inflammatory Marker to Clinical Course of Critically Ill COVID-19 Patient Require Prolong Hospitalisation? (Conference Abstract ID: ABS0012)
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Introduction: Severe acute respiratory syndrome by coronavirus 2 (SARS-CoV-2) pandemic first time started from Wuhan in China in December 2019, the World Health Organization on February 11, 2020, officially named this infection, coronavirus disease 2019 (COVID-19) and the virus as SARS-CoV-2. Clinical assessment is indispensable, but laboratory markers, or biomarkers, can provide additional, objective information which can significantly impact many components of patient care. There are several studies and meta-analyses that showed the relation between potential biomarkers to outcomes like mortality, need for ICU admission, mechanical ventilation, and duration of hospital stay. However, the temporal variation of biomarkers along the course of the illness is important to ascertain disease progression and therapeutic response. Objective of study: 1. Trends of blood biomarkers in critically ill patients require prolonged hospitalization. 2. Relation between temporal variation in blood biomarker and course of illness. Materials and methods: This was a retrospective hospital-based observational study, conducted between 1st May and 30 June, 2021, we included all adult patients aged >18 years with RTPCR or antigen positive COVID-19 infections, admitted in intensive care unit for at least 30 days, and discharged from the hospital. All patients admitted to our institute are investigated and treated as per the COVID treatment protocol of our institute. Blood biomarkers such as C-reactive protein (CRP), ferritin, lactate dehydrogenase (LDH), and D-dimer level tested at various intervals during hospitalisation details were noted along with clinical severity. To look for a trend, we took four levels of blood biomarkers at an interval of 10 days and compared then mean value (Day 1–5, Day 10–15, Day 20–25, and Day 30–35). Clinical severity is measured on basis of type of respiratory support like mechanical ventilation, non-invasive ventilation, oxygen through a non-reservoir mask or simple face mask or nasal prong. Results: Total nine patients (six males and three females) were discharged from Intensive care after >30 days of hospitalisation. Among CRP, LDH, ferritin, and D-dimer, only LDH fall and below the baseline level at the time of discharge (Table 1). Other markers have a wide fluctuation in their level and found either similar or higher levels at discharge compared to baseline level. D-dimer found to be increased during the course of
weaning in ICU. There are limitations of CRSBI as a weaning indicator. Accessory muscles are easily fatigable and their contribution is transient, yet contributes to some extent to the tidal volume during respiratory distress; this gives rise to low RSBI favouring weaning. Other studies by Yang et al., Lee et al. and Pirompanich et al. have shown different sensitivities (97%, 72%, 96%, respectively) and specificities (64%, 11%, 44.4%, respectively) for RSBI of ≤105 for predicting weaning success. Objectives: The aim of the study is to compare Diaphragmatic RSBI (D-RSBI) with C-RSBI as a successful predictor of weaning in ready to wean patients.

Materials and methods: This is a prospective randomized comparative study over 2 years from December 2019 to November 2021. Patients admitted to ICU who have been mechanically ventilated for at least 48 hours will be enrolled for study after meeting inclusion and exclusion criteria. Sample size calculated as 142 by nMaster 2.0 software. Randomization done into two groups just before starting weaning: C-RSBI group (71 patients): conventional RSBI (RSBI < 105 at ≥30 minutes as predictor successful weaning). D-RSBI group (71 patients): Patients to undergo D-RSBI (D-RSBI < 1.6 at ≥30 minutes as predictor successful weaning). C-RSBI and D-RSBI will be calculated at 1 minute, 30 minutes, and 60 minutes from the beginning of the SBT. An average of three consecutive RSBI will be taken each time, i.e., at 1 minute, 30 minutes, and 60 minutes. D-RSBI = RR/DD (respiratory rate/diaphragmatic displacement in mm). Average of D-RSBI of both left and right sides will be taken each time, i.e., at 1 minute, 30 minutes, and 60 minutes. The decision to extubate the patients of both groups will be performed based on common criteria after 60 minutes SBT and CRSBI or DRSBI. Extubation success will be compared in both groups.

Statistical analysis: Data will be analysed using Statistical Package for the Social Sciences (SPSS version 20.0) software. Discussion: All observations will be discussed with reference to the currently available literature.

13. Diaphragmatic Rapid Shallow Breathing Index Compared to Conventional Rapid Shallow Breathing Index as an Indicator for Weaning: A Randomised Prospective Superiority Study (Conference Abstract ID: ABS0013)
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Aim and background: Conventional rapid shallow breathing index (CRSBI = RR/VT) is a well-known method for the prediction of weaning. illness and raised from the baseline level of 2.1–7.7 at the time of discharge. Wide fluctuation in their level found for CRP followed by LDH and lowest for ferritin during hospitalisation. CRP and ferritin initially fall around day 10 of ICU while LDH increased during the same period (Fig. 1). Out of nine patients, seven patients were on NIV support, one patient on HFNC, and one patient on a simple face mask. Even after 30 days of hospitalisation, one patient was on NRM support, five patients require oxygen through a face mask, and one patient was prone nasal prong (Table 1). Conclusion: There is no association between temporal variation in blood biomarkers with the clinical course of COVID-19 disease. Among CRP, LDH, ferritin, and D-dimer, LDH is most closely associated with the clinical course of the disease.

14. Sequelae of COVID-19 Pneumonia: Our Experience in High Dependence Unit (Conference Abstract ID: ABS0014)
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Background: SARS COVID-19 infection has brought about myriad presentations that could be disease-related, or iatrogenic. Aim: To study the occurrence of complications or sequel arising after...
Background: Cerebral venous sinus thrombosis is the presence of a blood clot in the dural venous sinuses, cerebral veins or both. It is a rare condition with only two to five cases per million people per year. Symptoms include severe headache, visual symptoms, stroke, and seizures. Ramya et al. and Rajput et al. reported that norethisterone and norethindrone acetate pills caused CVST in a patient with hyperhomocysteinaemia. The association between the progestin-only pill and central venous sinus thrombosis has rarely been reported. This report describes a case of central venous sinus thrombosis following intake of norethindrone for dysfunctional uterine bleeding secondary to polycystic ovary syndrome in a young female.

Case report: A 16-year-old female with diagnosed case of polycystic ovarian syndrome for 3 months, presented with a history of gradually worsening headache for 2 days associated with vomiting, projectile type. She had no history of fever, focal weakness, no gait disturbance, blurring of vision, seizures, head trauma, and neck stiffness. She was on oral medications of norethisterone 5 mg in view of polycystic ovarian syndrome for 3 months, she was non-diabetic, hypertensives and on general physical examination patient was conscious, oriented and the patient was vitally stable, the patient had severe pallor. Central nervous systemic examination was unremarkable with no focal neurological deficits. Kernig’s and Brudzinski’s signs were negative. On blood investigation, hemoglobin was 5.6 g/dL, sickling solubility test was negative. The patient was treated with a blood transfusion. A brain CT scan was done i/v/o headache, showed a left parietal lobe venous infarct, secondary to a venous dural sinus thrombosis, MRI and magnetic resonance venogram was planned which shows

Materials and methods: Study period: 15th August to 16th October 2020. Inclusion criteria: All adult patients shifted from COVID isolation units and who are critically ill. Exclusion criteria: Pediatric patients <14 years. Patients with negative RTPCR at the time of admission. COVID-19 negative pneumonia. Observation: Respiratory and neurological sequelae are most commonly observed. Pulmonary fibrosis presented as most respiratory sequelae with an incidence of 7.05% (pneumothorax in patients with spontaneous respiration or invasive ventilation. Pneumomediastinum and subcutaneous emphysema are more found in invasive mechanical ventilation patients. Among neurological complications, delirium was seen in as many as 7.05% of patients. AIDP/GBS (2.35%) are not uncommon among neurological sequelae. Bleeding complication observed in 3.37% of the ICU population which includes intracranial hemorrhage, haematuria, intra-abdominal haematoma. Thromboembolic complication observed in 1.17% ICU population deep vein thrombosis being most common. Results: Pulmonary fibrosis is the most common sequelae in COVID-19 disease. This is the most common cause leading to pneumothorax or pneumomediastinium or surgical emphysema. Neurology symptoms are the most common symptom. Delirium being the most common form of presentation. COVID-19 being a prothrombotic disease we also observed some thromboembolic disease most common being DVT (deep vein thrombosis). Conclusion: COVID-19 involves almost each and every system of the body. This subsequently gives rise to some sequelae or complication directly from viral etiology or related to complication. The exact reasons are yet to be found out.

15. Norethisterone Induced Cerebral Venous Thrombosis: A Case Report (Conference Abstract ID: ABS0015)

Rahul Dilip Bhiwgade, Tilotamma Parate

Figs 1A to D: MRI OF BRAIN + VENOGRAPHY shows complete thrombosis of the left internal cerebral vein, straight sinus, left transverse sinus, and partial thrombosis of the vein of Galen, venous sinus confluence, left sigmoid sinus extending into the left proximal internal jugular vein.
complete thrombosis of the left internal cerebral vein, straight sinus, left transverse sinus, and partial thrombosis of the vein of Galen, venous sinus confluence, left sigmoid sinus extending into the left proximal internal jugular vein. She was diagnosed to have multiple cerebral venous sinus thrombosis due to norethisterone. She was treated with mannitol injection and dexamethasone. Anticoagulation was initiated with warfarin after bridging with low molecular weight heparin enoxaparin. The patient recovered completely within 1 week and was discharged. Conclusion: This Case illustrates that patients who are prescribed progestogen-only pills for polycystic ovarian syndrome may develop cerebral venous thrombosis.

References

16. Inhalers Use Confidence vs Overconfidence in Step Down ICU (Conference Abstract ID: ABS0016)
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Introduction: Traditional asthma and COPD management is reactive and not proactive, which exacerbates emergency room visits and perpetuates a vicious cycle of poor disease management. Incorrect use of inhalers is a major hurdle for disease management and therefore patient education can become an important tool, albeit it being costly and also time-consuming. Perhaps there is a way to target these interventions to patients who would benefit most. Aims and objectives: The objective of this study is to establish whether a patient’s self-reported confidence is a good predictor of correct inhaler technique, to better-target educational interventions to those with low confidence. Materials and methods: Sample size 55 patients in step down ICU. Inclusion criteria: 1. Patients with obstructive airways diseases. 2. Patients with restrictive airways diseases. 3. Patients with post tubercular fibro-cavitary diseases. 4. Patients with ILD. 5. Patients 18 years and above. Exclusion criteria: 1. Patients with GCS less than 10. 2. Patients with neuromuscular disorders. 3. Patients not consenting for the study. Intervention: Patients received either Brief Intervention (BI), Teach-to-Goal (TTG), or Virtual Teach-to-Goal (V-TTG). Inhaler misuse was categorised as getting ≤75% of the steps correct. Participants self-reported their confidence levels using a Likert scale ranging from 1 (Not confident) to 5 (Very Confident). Results: Our study group consisted of predominately women (66.46%), with an average age of 53.31 (S.D. 12.3). As a whole, the average confidence score pre-intervention were: BI=4.75, TTG=4.41, V-TTG=5.08, and inhaler misuse was common: BI-96.88%, TTG-88.94%, V-TTG-92.24%. A binary logistic regression showed that the participant being confident had no significance in decreasing the odds of inhaler misuse compared to the participant being not confident. An ordinal logistic regression of confidence levels versus inhaler misuse found no internal or external factor which increased, or decreased, the odds of a participant being confident in their inhaler use. Post educational intervention, there was ongoing inhaler misuse: BI-78.41%, TTG-23.31%, V-TTG-28.66% and no significant change in confidence by intervention: BI+0.65, TTG+0.45, V-TTG+0.4. Conclusion: Patients are over-confident when it comes to gauging their ability to use their inhalers correctly. Therefore, self-reported confidence scores are not a valuable tool in optimizing inhaler technique education among patients. Additionally, there is no factor that predicts patients’ confidence in using their inhalers. Clinical implication: Simply inquiring whether patients are confident in their inhaler technique is insufficient and inhaler education must be assessed at every patient interaction. Furthermore, since there is no significant variable predicting patient’s confidence, all patients must be taken as a blank slate, and inhaler education should be taught across the board at each individual encounter.

17. Non-invasive Ventilation (NIV) with Auto-EPAP in Elderly Patients with Obstructive Sleep Apnea-hypopnea Syndrome (OSAHS) (Conference Abstract ID: ABS0017)
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Aims and objectives: To investigate the impact of different EPAP levels in NIV on elderly OSAHS patients. Materials and methods: Sample size 48. 1. A comparative study, all patients diagnosed with OSAHS, a total of 48 elderly patients were included (age: (71 ± 8.4 years, BMI: 28.3 ± 7.4 kg/m²). 2. Depending on the level of EPAP, all subjects were randomly divided (1:1:1) into three groups: a. Narrow scale-EPAP group (EPAP min = 8 cmH2O, EPAPmax = 10 cmH2O), b. Wide scale-EPAP group (EPAP min = 4 cmH2O, EPAPmax = 16 cmH2O) and c. Fixed EPAP group (EPAP = 8 cmH2O), all patients underwent NIV, AVAPS-AE mode in both Narrow scale-EPAP group and Wide scale-EPAP group; AVAPS mode in the fixed EPAP group. Results: 1. There were significant differences in leakage among the “Fixed-scale EPAP” and “Wide-scale EPAP group” (18.2 ± 4.4 L/min vs 15.4 ± 2.5 L/min, p = 0.037), 2. Lower occurrence of intra-abdominal hypertension in the Wide-scale EPAP group than in the Fixed-scale EPAP group (p < 0.05). 3. There were no differences in lowest oxygen saturation (LSaO2) and improvement of Epworth Sleepiness Scale (ESS) and AH1 among the three groups. 4. Compared with wide scale-EPAP group, higher occurrence of patient-ventilator asynchrony in fixed EPAP group: but there were no statistical differences (43.8% vs 25.0%, X2 = 1.247, p = 0.264). Conclusions: For elderly OSAHS patients, a varying range of EPAP may be more likely to improve their comfort during NIV, rather than a fixed EPAP level. But, there were no significant differences in changes in improvement of LSaO2, ESS, and AH1, our results need further study.

18. Quality of Life in Post ICU Patients with Varying Pulmonary Diseases (Conference Abstract ID: ABS0018)
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Aims and objectives: 1. To compare the quality of life (QoL) between adequately oxygenated (SpO2 95% and above) and inadequately oxygenated (SpO2 88–92%) patients post ICU. 2. To determine the
plasma exchange can be considered in decreasing plasma levels and methemoglobin levels. Subsequently, patients' methaemoglobin levels increased with marked acrocyanosis developed haemolysis after 24 hours of initiating methylene blue.

**Conclusion:** We present an unusual case report of polypharmacy-induced methemoglobinemia in a schizophrenic patient, which was complicated by haemolysis secondary to methylene blue therapy with the normal G6PD levels. Polypharmacy (valproate) induced methemoglobinemia is an uncommonly seen condition that is associated with the management of ECMO in critically ill COVID-19 patients. We report a case series of challenges and strategies for managing critically ill COVID-19 patients on ECMO support for severe ARDS. Seven COVID-19 patients required VV ECMO of which three were women and four were men of median age of 43 years. Among seven, three cases (42%) recovered. We experienced multiple challenges and complications in the management of the patients, being a non-ECMO centre with limited resources, in heavy workload during the second wave of the pandemic. All the patients required multiple invasive procedures like placement of invasive lines, frequent bronchoscopies for bronchial toileting. Displacement of both ECMO cannulas required repositioning under ultrasound guidance, four patients underwent percutaneous tracheostomy on ECMO. Three patients had ECMO-oxygenator failure that required the exchange of a new ECMO circuit. ACT was monitored for the management of anticoagulation. A challenging task is to achieve a balance between bleeding and thrombotic events, for which anticoagulation had to be stopped for the acceptable ACT, required transfusion of multiple blood products for correcting coagulopathy. One patient developed HIT antibodies and managed with bivalirudin for the management of anticoagulation which was challenging in titrating the drug dose and ACT. Two patients had an intracranial haemorrhage on ECMO support, managed conservatively despite anticoagulation. Pseudoaneurysm of femoral vein diagnosed and managed with ultrasound-guided thrombin injection. Four patients got decannulated from ECMO. One patient had unexplained severe haemolysis immediately after initiation of ECMO, unfortunately, he could not recover. Management of VV ECMO in resource-limited, non-ECMO centre in a pandemic is challenging. Mortality depends on various factors, despite expertise, advanced critical care management in COVID-19 ARDS and ECMO. Increased use of VV ECMO during the second wave of pandemic reported significant changes in strategies for management of challenges, though further studies are still required for the best outcome.

**Case series:** Extracorporeal membrane oxygenation (ECMO) use for severe acute respiratory distress syndrome due to coronavirus disease 2019 (COVID-19) patients has increased during the second wave of the pandemic. However, there are many complications associated with the management of ECMO in critically ill COVID-19 patients. We report a case series of challenges and strategies for managing critically ill COVID-19 patients on ECMO support for severe ARDS. Seven COVID-19 patients required VV ECMO of which three were women and four were men of median age of 43 years. Among seven, three cases (42%) recovered. We experienced multiple challenges and complications in the management of the patients, being a non-ECMO centre with limited resources, in heavy workload during the second wave of the pandemic. All the patients required multiple invasive procedures like placement of invasive lines, frequent bronchoscopies for bronchial toileting. Displacement of both ECMO cannulas required repositioning under ultrasound guidance, four patients underwent percutaneous tracheostomy on ECMO. Three patients had ECMO-oxygenator failure that required the exchange of a new ECMO circuit. ACT was monitored for the management of anticoagulation. A challenging task is to achieve a balance between bleeding and thrombotic events, for which anticoagulation had to be stopped for the acceptable ACT, required transfusion of multiple blood products for correcting coagulopathy. One patient developed HIT antibodies and managed with bivalirudin for the management of anticoagulation which was challenging in titrating the drug dose and ACT. Two patients had an intracranial haemorrhage on ECMO support, managed conservatively despite anticoagulation. Pseudoaneurysm of femoral vein diagnosed and managed with ultrasound-guided thrombin injection. Four patients got decannulated from ECMO. One patient had unexplained severe haemolysis immediately after initiation of ECMO, unfortunately, he could not recover. Management of VV ECMO in resource-limited, non-ECMO centre in a pandemic is challenging. Mortality depends on various factors, despite expertise, advanced critical care management in COVID-19 ARDS and ECMO. Increased use of VV ECMO during the second wave of pandemic reported significant changes in strategies for management of challenges, though further studies are still required for the best outcome.

**Clinical implications:** Pulmonologists might be better served to emphasise a patient’s highest reported Borg score with exertion for those patients who are inadequately oxygenated (and, thus, qualify for supplemental oxygen) when determining what type of oxygen delivery system that patient should use.

**Conclusion:** Neither the adequacy of oxygenation nor pulmonary disease state showed significant correlations with either symptom, activity, life impact, or total SGRQ scores. The main contributors to variation in SGRQ total score were highest reported Borg score (dyspnea), patient age, 6-minutes walk test distance, and nadir SpO2 with exertion to QoL.

**Results:** No significant correlations existed between patient oxygenation state [adequately (n = 86) or inadequately (n = 40)] and the symptom, activity, life impact, or total SGRQ scores. Similarly, no significant correlations were noted between patient disease state and the various SGRQ scores. The main contributors to variation in SGRQ total score were the highest reported Borg score (dyspnea), patient age, 6-minutes walk test distance, and nadir SpO2, (totaling 28.7% variation) with the highest reported Borg score accounting for the largest variation among these parameters at 24.2%.

**Conclusion:** Neither the adequacy of oxygenation nor pulmonary disease state showed significant correlations with either symptom, activity, life impact, or total SGRQ scores. The highest reported Borg score (dyspnea) accounts for the largest single contributor to the total SGRQ scores.

**Clinical implications:** Pulmonologists might be better served to emphasise a patient’s highest reported Borg score with exertion for those patients who are inadequately oxygenated (and, thus, qualify for supplemental oxygen) when determining what type of oxygen delivery system that patient should use.

**19. Unusual Case of Polypharmacy Induced Methemoglobinemia in Schizophrenic Patient (Conference Abstract ID: ABS0019)**

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We present an unusual case report of polypharmacy-induced methemoglobinemia in a schizophrenic patient, which was complicated by haemolysis secondary to methylene blue therapy with the normal G6PD levels. Polypharmacy (valproate) induced methemoglobinemia is an uncommonly seen condition that is usually treated with 10% methylene blue, but in our case patient developed haemolysis after 24 hours of initiating methylene blue. After initial reduction with methylene blue therapy, patients’ methemoglobinemia levels increased with marked acrocyanosis and methaemoglobin level of >38%, which was managed with RBC erythropheresis. But with recurring high methaemoglobin levels, plasma exchange was done to decrease the inciting drug plasma levels. Subsequently, patients’ methaemoglobin levels decreased to the normal range. **Conclusion:** RBC erythropheresis can be considered in decreasing methaemoglobin levels and plasma exchange can be considered in decreasing plasma levels of inciting drug in unknown poisoning where traditional methods fail, although it has a low level of recommendation as per ASFA guidelines.
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Introduction: Charlson Co-morbidity Index (CCI) score has been shown to be an independent predictor of outcome in hospitalized COVID-19 patients. Patients with a score ≥3 have been shown to have increased chances of poor outcomes. Recent literature has shown a CCI score >4 as being a predictor for the need for mechanical ventilation and mortality. Regarding inflammatory markers, C-reactive protein (CRP) and ferritin have been shown to have significance in predicting morbidity and mortality in COVID-19 patients. However, most studies have analyzed an absolute cut-off value of these markers rather than the importance of a significant rise of these markers post ICU admission. Aim and objectives: The study aimed to determine the association between CCI score and a significant rise in CRP, ferritin, and lactate dehydrogenase (LDH) in the first 72 post ICU admission. Primary objective: Association of patients having high CCI score ≥3 with a significant rise in CRP, ferritin, and LDH in 72 hours post ICU admission. Secondary objective: Association of the significant rise of CRP (>10 mg/L), ferritin (>95 ng/mL) and LDH (>238 U/L) in the first 72 hours post ICU admission with outcome in terms of mortality. Materials and methods: Moderate-severe COVID-19 patients who were admitted to the ICU were recruited for the study. It was a single-centre prospective observational study in which 62 patients were recruited from November 2020 to March 2021. Age, gender, CCI score, baseline CRP, ferritin, and LDH were recorded. The rise in inflammatory markers was noted after obtaining the levels of CRP, ferritin, and LDH after 72 hours. It was noted whether there was a significant rise in CRP, ferritin, and LDH as defined above. The mortality outcomes of the patients were noted. Results: 34/62 patients had low CCI <3 (55%) and 28/62 patients (45%) had a high CCI score ≥3. In patients with CCI ≥3, 35% of patients had a significant CRP rise in 72 hours post ICU admission, 30% had a significant rise in ferritin, and 20% had a significant rise in LDH. There was no significant association between patients with higher CCI scores and a significant rise in CRP, ferritin, and LDH in 72 hours of ICU admission (Mann–Whitney test, p > 0.05). Among those who expired (18/62) patients, there was a 25 times higher chance of a significant rise in ferritin by >95 ng/mL at 72 hours after ICU admission (multivariate logistic regression analysis). Conclusion: High Charlson comorbidity index score is not associated with a higher chance of a significant rise in inflammatory markers CRP, ferritin, and LDH in 72 hours post ICU admission in COVID-19 patients. Among those who expired, there was a 25 times higher likelihood of significant ferritin rise by >95 ng/mL in 72 hours of ICU admission, as compared to those who survived.

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Objective: To compare the effect of hypocaloric (underfeeding) vs isocaloric (full feeding) critically ill ICU patients who are on enteral nutrition (EN) during 7 days of ICU stay. The primary endpoint was 90-day mortality and SOFA (sequential organ failure assessment) score at 48 hours, the secondary endpoint was SOFA score at 96 hours, hyperglycaemia events per day, insulin requirements per day, LOS (length of stay in ICU) days, duration of mechanical ventilation (MV) days, aspiration, infections, renal replacement therapies, 28-day mortality. Materials and methods: We conducted an observational double-blind randomised control at the Intensive Care Unit of Apollo Hospital. After approval from the ethical committee and written informed consent from the patients. All patients admitted to the intensive care unit during the 6 months period from May 2021 to October 2021 were enrolled in the study. The study population consisted of adult patients (18 years or older) admitted in the ICU and expected to require EN [enteric nutrition] at least 96 hours. Patients who are <18 years, with concomitant parenteral nutrition, pregnant women, in transplantation program, chronic renal failure, uremic encephalopathy, diabetes, morbid obesity, or do-not-resuscitate orders are excluded from the study. Patients are randomly divided into two groups by the lottery generated method. Group I (N = 50)–Intervention group, i.e., permisive underfeeding hypocaloric (15 kcal/kg/day and protein 1.7 g/kg/day) and group II (N = 50) Control group, i.e., full feeding isocaloric (25 kcal/kg/day and protein 1.7 g/kg/day). The sample size was calculated using SPSS 21.50 patients per arm were necessary to provide 80% power and a error of 0.05 to detect a 15% (1.7 points) difference in SOFA at 48 hours between the 2 groups with an SD of 1.9 with a two-tailed t-test. We used SPSS21 statistical analysis. Baseline characteristics and outcomes were analysed depending on the nature of the variables. The normality of quantitative data was assessed by inspecting histograms and quantile plots. Normally distributed data were analysed with a two-tailed t-test (p = 0.05). Otherwise, the Wilcoxon rank-sum test was used. We assessed categorical data using a normal z test. Fisher’s exact test when sparse data were present. Results: There is no statistical significant difference between hypocaloric (underfeeding) vs isocaloric (full feeding) regarding baseline characteristics and the primary endpoint, i.e., SOFA at 48 hours but a statistical difference in mortality at 90 days, i.e., low in underfeeding group. Secondary endpoints, i.e., SOFA at 96 hours, LOS days, MV days no statistical difference between two groups. But a statistical decrease in aspiration, hyperglycemic events, insulin requirements, renal replacement therapies in hypocaloric group compared to isocaloric group. Conclusion: Results in our study justifies to give hypocaloric feeds in critically ill ICU patients as there is a statistically significant decrease in 90-day mortality in the intervention group and also decreasing in infectious complications and RRT requirements. And moreover, permisive underfeeding favours increase life span, promotes favourable cytokine profile, longevity biomarkers and also positive effects on metabolic and hormonal changes.

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Case report: COVID-19 infection though mainly presents as a respiratory disease it can also present as secondary stroke due to thrombotic complications. We report a case of a 28-year lean
male with no underlying comorbidities and addiction who had a history of fever, cough, and neck weakness of 10 days duration and presented to us with sudden painless loss of vision in both eyes. On the evaluation of his d-dimers, serum LDH was raised. HRCT showed a CTSI of 17/25. His MRI brain showed hyperintense foci of diffusion restriction in the occipital lobe suggestive of acute infarct within the territory of a respective posterior cerebral artery. Conclusion: Stroke in COVID-19 is seen more among patients with severe respiratory disease due to thrombotic complications. Though elderly age and co-morbidities are a risk factor for increased disease severity and complications, severe disease can occur in young healthy individuals. Thus, COVID-19 disease is an independent risk factor for stroke.

26. Multisystem Inflammatory Syndrome in Indian Children Associated with SARS-CoV-2 Infection: A Case Series (Conference Abstract ID: ABS0026)

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Introduction: The coronavirus disease 2019 pandemic has affected all the countries and age groups alike. However, during the initial part of a pandemic, COVID-19 affected children with a milder form of the disease and had better clinical outcomes than adults.1 Subsequently, a rising number of previously well children with severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) induced hyperinflammatory states resembling macrophage activation syndrome, toxic shock syndrome, and Kawasaki disease were reported.2 Here, we describe four children with COVID-19-associated MIS-C presenting to a tertiary care center between May 17 and June 17, 2021. They had distinct clinical features, but similar laboratory and radiological findings. However, none of them were positive for SARS-CoV-2 nucleic acid on real-time polymerase chain reaction but all of them had elevated immunoglobulin G titers against SARS-CoV-2. Case description: Four previously well children, aged 13–14 years, including equal number of males and females, presented to us with complaints of fever with rash, abdominal pain for 5–6 days. None of the patients had comorbidities, except patient 2, who was a known case of type 1 diabetes mellitus and was receiving huminsulin. At presentation, patients 1 and 4 had hypovolemic shock and dyspnea. There was mild global hypokinesia with mild tricuspid and mitral regurgitation in patient 3 and biventricular dysfunction (ejection fraction: 54%) with mild pericardial effusion in patient 4. Laboratory investigations revealed negative for malaria, dengue, scrub typhus, and leptospira in all the patients. Neutrophilia and lymphocytosis were observed in every patient. All, except patient 2, had thrombocytopenia. The international normalization ratio was raised in patients 1 and 2. All patients had negative RT-PCR for SARS-CoV-2. While, the levels of COVID-19 IgG antibody, C-reactive protein, D-dimer, lactate dehydrogenase, erythrocyte sedimentation rate. They were managed in the medicine intensive care unit (MICU). The shock and hypoxia was managed with fluids and inotropes and 6–8 L O₂.
distinct clinical features, with some mimicking atypical KD, the underlying mechanism for which still remain unclear. The physicians should be suspicious of MIS-C in children presenting with fever, rash, and gastrointestinal symptoms.

References


through bag-mask-ventilation (BMV). Additionally, in all the patients, MIS-C was suspected and intravenous immunoglobulin (IVIG, 2 mg/kg), intravenous methylprednisolone, low molecular weight heparin, broad spectrum antibiotics, fluid therapy, and supportive care was initiated. One of them developed cardiopulmonary arrest. Resuscitation was done but the patient could not be revived back. While other patients responded well over the next 48–72 hours with a gradual decrease in titers of inflammatory markers. Steroids were slowly tapered off and patients were discharged.

Conclusion: The findings of our series suggest that COVID-19 can trigger a hyperinflammatory state resulting in shock and pulmonary involvement, in some of the patients. The patients presented with

| Table 1: Demographic and clinical characteristics and findings on investigations |
|----------------------------------|----------------|----------------|----------------|----------------|
| **Clinical characteristics**     | **Patient 1** | **Patient 2** | **Patient 3** | **Patient 4** |
| Age, years                       | 13            | 14            | 14            | 14            |
| Sex                              | Male          | Male          | Female        | Female        |
| History of contact               | Present       | Absent        | Absent        | Absent        |
| Comorbidities                    | No            | Type 1 DM     | No            | No            |
| Time to presentation, days       | 5             | 6             | 10            | 7             |
| Disease severity                 | Severe        | Mild          | Mild          | Severe        |
| Body temperature, °F             | 102.3 (↑)     | 101.3 (↑)     | 100.4 (↑)     | 101.7 (↑)     |
| Respiratory rate, per min        | 32 (↑)        | 30 (↑)        | 22 (N)        | 28 (↑)        |
| Heart rate, per min              | 130 (↑)       | 110 (↑)       | 108 (↑)       | 118 (↑)       |
| Blood pressure, mm Hg            | 80/60 (↑)     | 100/60 (N)    | 90/60 (N)     | 70/40 (↑)     |
| SpO2 on RA, %                    | 85 (↑)        | 95 (N)        | 99 (N)        | 83 (↑)        |
| COVID-19 RT-PCR                  | Negative      | Negative      | Negative      | Negative      |
| COVID-19 IgG titer, U/mL         | 250 (↑)       | 131 (↑)       | 88 (↑)        | 72 (↑)        |
| Hb levels, g/dL                  | 12.4 (N)      | 9.9 (↑)       | 10 (↑)        | 10.7 (↑)      |
| Leucocyte count, cells/µL        | 15700 (↑)     | 16300 (↑)     | 1700 (N)      | 5400 (N)      |
| Platelets, cells/µL              | 95000 (↑)     | 151000 (N)    | 71000 (↑)     | 97000 (↑)     |
| Neutrophils, cells/µL            | 20.8 (↑)      | 80 (↑)        | 56 (↑)        | 83 (↑)        |
| Lymphocytes, cells/µL            | 9.16 (↑)      | 16 (↑)        | 38 (↑)        | 11.3 (↑)      |
| C-reactive protein, mg/L         | 110 (↑)       | 107.9 (↑)     | 84.1 (↑)      | 123 (↑)       |
| ESR, mm/hour                     | 54 (↑)        | 60 (↑)        | 47 (↑)        | 56 (↑)        |
| Procalcitonin, ng/mL             | 0.10 (↑)      | 0.16 (↑)      | 0.08 (N)      | 0.12 (↑)      |
| LDH, IU/L                        | 352 (↑)       | 888 (↑)       | 628 (↑)       | 560 (↑)       |
| D dimer, µg/L                    | 4060 (↑)      | 9640 (↑)      | 2633 (↑)      | 1300 (↑)      |
| INR                              | 1.44 (↑)      | 1.21 (3)      | 1.1 (N)       | 1.12 (N)      |
| Fever profile                    | Negative      | Negative      | Negative      | Negative      |
| Blood culture                    | Negative      | Negative      | Negative      | Negative      |
| Urine culture                    | Negative      | Negative      | Negative      | Negative      |
| Liver function test              | WNL           | WNL           | WNL           | WNL           |
| Renal function test              | WNL           | WNL           | WNL           | WNL           |
| X-Ray chest                      | WNL           | WNL           | WNL           | WNL           |
| HRCT chest                       | WNL           | WNL           | ND            | ND            |
| ECG                              | Sinus Tachycardia | Sinus Tachycardia | Sinus Tachycardia | Sinus Tachycardia |
| 2D ECHO                          | WNL           | WNL           | Mild global hypokinesia | Biventricular dysfunction, mild pericardial effusion |
| Hospital stay, days              | 2             | 10            | 7             | 10            |

SpO2 on RA, oxygen saturation on room air; RT-PCR, real-time polymerase chain reaction; Ab, antibody; Hb, hemoglobin; ESR, erythrocyte sedimentation rate; LDH, lactate dehydrogenase; INR, international normalization ratio; Fever profile, malaria, dengue, Scrub Typhus, and Leptospirosis; WNL, within normal limits; HRCT Chest, high-resolution computed tomography of chest; ND, not done; ECG: electrocardiography; 2D ECHO, Two-dimensional echocardiography; ↑, increased; ↓, decreased; N, normal; ND, not done.
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Aim and background: Management in COVID-19 includes the use of steroids, prolonged hospital stay, and long-term ventilatory care using muscle relaxants for lung-protective ventilation. These patients are subjected to fluctuating hemodynamics, blood sugar levels, secondary sepsis, systemic inflammatory response syndrome, and multi-organ dysfunction. This causes an increased risk for developing critical illness polyneuropathy and myopathy.

Objectives: The literature assessing the effect of these risk factors on mortality in patients with COVID-19 is scarce. Hence, we assessed the effect of various risk factors and interventions on the long-term outcome in these patients.

Materials and methods: We collected retrospective data of critically ill COVID-19 patients who developed from critical illness myopathy. The demographic details, clinical parameters, laboratory values, effect of protocol-based physiotherapy intervention, and long-term outcome of patients in term of residual weakness, dependency, and mortality was collected.

Results: Out of the total 324 critically ill COVID-19 patients, 11 patients were diagnosed with critical illness myopathy and were included for data collection. Among the patients who developed critical illness myopathy, in-hospital mortality was around 36.4%. The use of protocol-based physiotherapy interventions like long sitting ($P = 0.007$) and, chair mobilization ($p = 0.001$) led to a significant reduction in mortality in COVID-19 patients.

Conclusion: In patients with COVID-19 related critical illness myopathy, the use of protocol-based physiotherapy interventions leads to improved survival.

Key messages: In patients with COVID-19 related critical illness myopathy, the use of protocol-based physiotherapy interventions has survival benefits.

Keywords: COVID-19, Critical illness myopathy, Neuromuscular weakness, Physiotherapy.

28. A Rare Case of M-RNA Vaccine (COVID-19) Induced Autoimmune Hemolytic Anaemia (Conference Abstract ID: ABS0028)
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Aim and Background: We present a rare case of autoimmune haemolytic anaemia (AIHA) in a 65-year-old patient 1-month post-COVID-19 vaccination. AIHA is a clinical condition characterized by autoantibody-mediated RBC destruction.

Materials and methods: Our patient had cold agglutinin disease, where antibody-mediated RBC lysis was demonstrated predominantly at 4-degree centigrade. Although AIHA is rare in this age group, excluding all secondary causes of AIHA like Epstein bar virus (EBV), hepatitis C virus, cryoglobulinemia, lymphomas we came to a conclusion that AIHA in this patient was triggered post-vaccination. We treated AIHA with steroids and rituximab.

Conclusion: Though vaccination is safe patients present with mild-to-moderate symptoms post-vaccination like fevers, limb pain, allergies hair loss, which are transient. Some patients may develop haemolysis secondary to autoantibody production post-vaccination owing to molecular mimicry. Hence, clinicians treating should have a high suspicion for it.

29. High-flow Nasal Cannula As Oxygenation Modality for of Pyogenic Empyema Complicated with Bronchopleural Fistula (Conference Abstract ID: ABS0029)
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Introduction: Oxygenation and ventilatory management of bronchopleural fistula (BPF) can be challenging. High-flow nasal cannula (HFNC) oxygen therapy is an upcoming form of noninvasive respiratory support gaining increasing attention.

Case report: A 32-year-old male prisoner presented to emergency with respiratory distress and high-grade fever for 7 days. On imaging bilateral pneumothorax and with pleural effusion was noted. A bilateral intercostal drain was inserted and frank pus was observed. Following this, the patient developed grade I BPF and was unable to maintain saturation with a non-rebreathing oxygen mask. Therefore, we used high-flow nasal cannula (HFNC) with an underwater seal ICD to manage his oxygenation. Culture-specific antibiotics and supportive care resulted in his recovery.

Conclusion: HFNC can be very useful oxygenation modality in cases of BPF where other modes of ventilation can be treacherous.

Keywords: Bronchopleural fistula, High flow oxygenation, Pyogenic empyema.

References

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Aim and background: The coronavirus 19 (COVID-19) disease is an infectious disease responsible for the ongoing global pandemic, caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which was first described in December 2019 in Wuhan, China. The major cause of mortality in COVID-19 is pulmonary complications and ARDS, but now acute kidney injury (AKI) is also seen to be a common complication, often associated with worse outcomes. Objective: We review the incidence and outcomes of AKI among patients with COVID-19 infection, admitted in ICU in a tertiary care hospital in a period of 3 months.

Materials and methods: This retrospective, observational study involved a review of 36 patients with COVID-19 admitted in a tertiary care hospital, who developed AKI. We describe the incidence of AKI among patients admitted during that time period, the requirement of dialysis among them, need for mechanical ventilation and mortality rate among them as compared those without AKI.

Results: Out of 234 patients hospitalised during this period, 14.9% developed AKI. 70% of patients had other risk factors like HTN,
diabetes mellitus. In-hospital mortality was 30.5% among patients with AKI versus 8% among those without AKI. As per staging done according to AKIN Criteria, 15 patients belonged to stage 1, 15 patients to stage 2, and 3 patients to stage 3. Of them, a total of 6 patients had required haemodialysis. 14 patients needed invasive mechanical ventilation. Of survivors with AKI who were discharged, 30% had not recovered to baseline kidney function by the time of discharge. Conclusion: AKI is common among patients hospitalized with COVID-19 and is associated with high mortality. Of all patients with AKI, 61% only survived with the recovery of kidney function by the time of discharge.

31. Predictive Ability of Intra-abdominal Pressure for Mortality in Patients with Severe Acute Pancreatitis: A Prospective Observational Study (Conference Abstract ID: ABS0031)

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Aim and objective: The primary aim of our study is to assess the predictive accuracy of the early rise of IAP in predicting mortality in patients with severe acute pancreatitis admitted to the intensive care unit (ICU). Background: Intra-abdominal hypertension (IAH) is a frequently reported complication in patients with severe acute pancreatitis (SAP) and is associated with organ dysfunction and mortality. Intra-abdominal pressure (IAP) increase in SAP develops in two phases. The first phase starts from the initial onset of symptoms to the first few days, the rise which is generally attributed to aggressive fluid resuscitation, inflammation of pancreatic tissue, and increased capillary permeability while the rise in the next phase is caused by secondary infection, SIRS (systemic inflammatory response syndrome), and peripancreatic necrosis. Materials and methods: Our study is conducted in Sir Ganga Ram Hospital, a tertiary care centre in New Delhi, India. Adult patients in the age group 18–65 years diagnosed with SAP, as defined by Revised Atlanta classification and presenting within 48 hours of symptom onset are included in our study. Admission Sequential Organ Failure Score (SOFA) and Acute Physiology and Chronic Health Evaluation II (APACHE II) scores are noted. IAP is measured using modified Kron’s method on the day of admission and every 24 hours for next five consecutive days. Daily IAP is noted as a mean of three readings taken at the end expiration or end expiratory pause (in mechanically ventilated patients). All the included patients are followed up until hospital discharge or mortality. Data are collected about the interventions and length of ICU and hospital stay. Results: Analysis of the data comprising of 50 patients was done. The incidence of intra-abdominal hypertension (IAP > 12 mm Hg) in the study population was seen in 29 out of 50 patients. The area under receiver operating characteristics (AUROC) for admission SOFA and APACHE II for mortality were, AUC = 0.755, SE 0.07, p = 0.04 and 0.722, SE 0.075 p = 0.01, respectively. AUROC for day 1, 2, 3, 4, and 5 were 0.709, 0.710, 0.689, 0.638, and 0.720, respectively. The mortality rate in patients who developed IAH was 37.9% (11 out of 29 patients) while in those who hadn’t was 23.8% (5 out of 21 patients) which was although statistically not significant (p = 0.291). Conclusion: The incidence of IAH is seen in 58 percent of the study population. Admission SOFA and APACHE II scores were good at predicting mortality. IAP reading on day 5 was more predictive of mortality. Keywords: Intra-abdominal hypertension, Intra-abdominal pressure, Severe acute pancreatitis.

32. Effect of Bevacizumab in Treatment of Severe COVID-19: Observations from a Tertiary Care ICU in South India (Conference Abstract ID: ABS0032)

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Aim and background: One of the primary causes of mortality and morbidity in the COVID-19 pandemic is dyspnea and hypoxia secondary to the pulmonary ARDS caused by the SARS-CoV-2 virus. It results in the increased expression of VEGF (vascular endothelial growth factor) triggered by the hypoxia. VEGF is responsible for increased permeability of the vasculature causing leaky capillaries in the alveoli and flooding of the air spaces. VEGF also participates in the lung inflammation. Bevacizumab is an anti-VEGF monoclonal antibody being used in cancer treatment since more than a decade without any serious adverse effects. Objective: Whether the addition of bevacizumab to standard treatment helps to have an effect on the need for invasive ventilation, duration of ICU stay, and all-cause mortality caused by the SARS-CoV-2 infection. Materials and methods: We retrospectively compared patients of either gender aged between 18 and 80 years who tested positive with RT-PCR for SARS-CoV-2 and were hypoxic but not needing mechanical ventilation at admission from a single tertiary care hospital ICU in southern India admitted between April 2021 and July 2021. We excluded pregnant women and patients with chronic kidney and liver disease. The control group received standard treatment which included remdesivir, steroids, anticoagulants, and oxygen supplementation as required whereas the test group received a single intravenous dose of bevacizumab (400–500 mg @7.5 mg/kg/iv) along with standard treatment. We compared the need of invasive ventilation, length of stay in ICU, and all-cause mortality. Results: 16 patients (57.1%) in the bevacizumab group required invasive ventilation later, whereas 15 patients (60%) in the control group ended up requiring invasive ventilation (p = 0.63). 10 patients (35.7%) in bevacizumab group died whereas 5 patients (20%) in the control group died during their stay in ICU P(0.2), the rest got discharged home. The average length of stay in ICU was 13.8 ± 7.05 days in bevacizumab group compared with 18.48 ± 15.21 days in the control group. Mortality rates in patients who needed invasive ventilation were 45.5% in the bevacizumab group vs 50% in the control group, whereas mortality rates in patients not needing invasive ventilation were 31.2% in the bevacizumab group vs 0% in the control group. The average length of stay in ICU in patients needing invasive ventilation was 18.8 ± 6.95 days in the bevacizumab group vs 25.2 ± 20.8 days in the control group, whereas the average length of stay in ICU in patients not needing invasive ventilation was 11.06 ± 5.5 days in the bevacizumab group vs 14 ± 8.03 days in the control group. Conclusion: The addition of bevacizumab to standard treatment did not have any statistically significant effect on the need for invasive ventilation, length of stay in ICU, and all-cause mortality caused by the SARS-CoV-2 infection. Patients who required invasive ventilation had longer lengths of stay and higher mortality rates as compared to patients who did not need invasive ventilation in both the groups, but it was not statistically significant.
33. A Prospective Study on Clinical Profile, Severity, Microbiological Profile, and Outcome of Patients with Ventilator-associated Infective Complications Admitted in Intensive Care Unit of a Tertiary Care Hospital (Conference Abstract ID: ABS0033)

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Aim and background: Mechanical ventilation epitomizes intensive care medicine. Ventilator-associated infective complications are mainly ventilator-associated respiratory infections (VARI); these are a major cause of concern in the intensive care units (ICUs) worldwide, especially in developing countries. VARI includes patients with ventilator-associated tracheobronchitis (VAT) and ventilator-associated pneumonia (VAP). Our study is a prospective, hospital-based study that will be conducted over a period of 12 months in the intensive care unit of a tertiary care hospital.

Objective: The primary objective of the study will be to study the risk factors, severity scoring, microbiological profile, and 28 days outcome of patients admitted to the intensive care unit of our hospital. The secondary objective of our study will be to find out any correlation between risk factors, severity scoring, microbiological profile and outcome of patients with VAT and VAP admitted in intensive care unit of our hospital.

Materials and methods: It is a prospective observational study done in the ICU of a tertiary care centre in eastern India. A total of 50 patients of clinically, microbiologically, and/or radiologically diagnosed case of VAP and VAT was included in the study. A structured data collection proforma was prepared and data collection was done. Raw data were tabulated and analysed. Results: 66% of our patients were males, smoking was the commonest addiction (24%), VARI developed early with 17% on day 3, 72% developed VARI within 5 days of ventilation. 16% had a history of recent admission, T2DM and HTN were the commonest comorbidities. 58% was VAT, the median SOFA score in VAT was 6 also the same in VAT. ET culture is the most commonly analysed sample. Neurological primary cases lead to a maximum number of VAT and VAP. Klebsiella pneumoniae was the commonest organism causing VAT (42%) while Acinetobacter was commonest to cause of VAP (44%) followed by Klebsiella pneumoniae (37%). 51% VAT were on volume control mode, VAT it was 52%. Most isolates are MDR pathogens with intermediate sensitivity to polymyxin being most common (66%) 1 isolate was pan-resistant. Mortality was 58% for VAT and 19% for VAT. Both Klebsiella and Acinetobacter accounts for 41% death in VAT group, in VAT group Klebsiella was commonest, however, no statistical significance with other organism. Conclusion: Gram-negative bacteria were the predominant cause of VAT and VAP, Acinetobacter and Klebsiella are the commonest organisms. Most isolates are MDR with intermediate sensitivity to polymyxins. The median sofa was the same in both, mortality was high in the VAT group. Volume control mode was the predominant mode of ventilation, neurological causes were the predominant cause that leads to ventilation and subsequent VARI.

34. Comparison of Trends of Procalcitonin and Neutrophil to Lymphocyte Ratio in Patients of Sepsis in Intensive Care Unit (Conference Abstract ID: ABS0034)

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Objective: This study aims to determine and compare the role of neutrophil-lymphocyte ratio (NLR) and procalcitonin (PCT) in prognosis of sepsis in intensive care unit.

Materials and methods: It was a single centre, prospective observational cohort study conducted in the Intensive Care Unit of the Department of Critical Care Medicine (tertiary care centre), Mumbai, from January 2020 to December 2020. After taking approval from Institutional Ethics Committee a total of 100 diagnosed cases of sepsis were included in the study. Blood samples were collected within 12 hours of admission from every patient, and thereafter in the follow-up time of 48 hours and 96 hours for neutrophil to lymphocyte ratio and procalcitonin determination.

Results: The results suggested that median (25th–75th percentile) of percentage increase in neutrophil lymphocyte ratio at day 2 in non-survivors was 72.94 which was significantly higher as compared to survivors (p value = 0.043). And median of percentage increase in procalcitonin at day 4 in non-survivors was 28.94 which was significantly higher as compared to survivors (p value = 0.035).

Conclusion: The increase in NLR at day 2 and PCT at day 4 can be important determinant of prognosis of sepsis in ICU. Keywords: Biomarkers, Neutrophil–lymphocyte ratio, Procalcitonin, Sepsis.

35. 0.45% vs 0.9% Saline in 5% Dextrose as Maintenance Fluids in Children Admitted with Acute Illness: A Randomised Control Trial (Conference Abstract ID: ABS0035)

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Aim and background: The safety of giving intravenous (IV) maintenance fluids according to Holliday and Segar’s recommendations of 1957 has recently been questioned following reports of complications caused by iatrogenic hypernatraemia in children receiving hypertonic fluids. However, the current practice of choice of maintenance IV fluids for hospitalized children varies worldwide. This study was planned to compare 0.45% and 0.9% saline in 5% dextrose at standard maintenance rates in hospitalized children aged 3 months to 12 years.

Objective: Primary objective was to study the change in serum sodium level at 24 hours in children receiving total intravenous fluid maintenance therapy as 0.45% or 0.9% normal saline in 5% dextrose. The secondary objective of this study was to estimate the change in serum sodium levels from the baseline to 48 or 72 hours, if intravenous fluids were continued and to find the incidence of hyponatraemia and hypernatremia after administering these two types of maintenance fluids.

Materials and methods: This study was an open labelled, randomised control trial conducted at the Department of Paediatrics, of a tertiary care hospital from 22 July 2019 to 28 October 2019. Two hundred children aged 3 months to 12 years admitted in paediatric emergency and requiring intravenous maintenance fluid were randomized into two groups (group I received 0.45% saline in 5% dextrose, group II received 0.9% normal saline in 5% dextrose) with 100 in each group.

Results: Both groups were comparable for baseline characteristics. Fall in mean serum sodium from baseline was more with increasing duration...
of IV fluids till 24 hours in 0.45% saline group as compared to 0.9% saline group, which was statistically significant (p value < 0.001). The incidence of mild and moderate hyponatraemia was significantly more in the hypotonic group at 12 hours (p < 0.001) and 24 hours (p < 0.001). However, there was no significant difference at 48 hours. Conclusion: The fall in serum sodium values was significant and there was a significant risk of hyponatraemia with the use of hypotonic fluids at 12 and 24 hours. Hence, the use of isotonic fluids seems to be more appropriate among hospitalised children. Keywords: Hyponatremia, Hypotonic, Isotonic, Maintenance fluids, Normal saline.

36. Practice Patterns of High Flow Nasal Oxygenation/Cannula Use for Acute Respiratory Failure in a Tertiary Care Hospital in India (Conference Abstract ID: ABS0036)
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Aim and background: High-flow nasal cannula (HFNC) delivers high flows of humidified air and oxygen via wide-bore nasal cannula and may be useful in providing respiratory support for adult patients experiencing acute respiratory failure in the intensive care unit. Objectives: Indications and appropriateness of use, the timing of initiation, duration of HFNO/C therapy, patient tolerance/comfort, the outcomes for patients, including escalation/de-escalation of respiratory support and ICU and hospital mortality. Materials and methods: It is a prospective observational study in the Multidisciplinary Critical Care unit. All patients with acute hypoxic respiratory failure of any aetiology, requiring HFNC therapy are included within 6 months of period. Intervention: None. Results: A total of 28 patients have been recruited so far and it will be continued till 15th October 2021. So far, no significant relation is found between HFNO failure and age, gender, APACHE II score, baseline P/F ratio, or PaCO₂ levels at initiation of HFNO therapy. Increased HFNO failure rate was found in the first 2 days of HFNO therapy (55%) when compared to HFNO therapy use >2 days (20%) (p = 0.11). No significant association was found between the duration of HFNO therapy use mortality in the ICU (p = 0.62). No significant difference in terms of comfort (Modified BORG score) between success and failure group at 2nd and 6th hours of initiation. Patients who failed presented a lower increase in the values of the ROX index over the 6 hours. De-escalation from HFNC is mostly on facemask (62.5%), followed by venturi mask (25%) and nasal cannula (12.5%). Conclusion: The recruitment for this study will be till 15th October 2021. 28 participants have been recruited so far. The final results of the same are yet to be analysed.

37. Challenges Faced by an ECMO Patient (Conference Abstract ID: ABS0037)
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Aim and objective: To elaborate the challenges faced by an ECMO patient and the issues to be overcome and how to address them and combat with the help of a multidisciplinary team. This is a case of a 34-year-old male patient without any comorbidities who tested positive for COVID on 08/07/21 who was on home quarantine for 8 days and reported to hospital on 16/07 in view of breathlessness, was started on oxygen, bipap and tried on remdesivir, steroids, and tocilizumab and baricitinib. The patient was not maintaining saturations and was intubated on 26/07 and as there was refractory hypoxaemia was initiated on ECMO on the next day. The patient was started on ceftazidime and levoflox with voriconazole as serum galactomannan was positive and ET cultures showed Stenotrophomonas maltophilia. The patient was tracheostomized on 01/08 and was keeping well till 12/08 when there were episodes of desaturation and tachypnoea and blood culture showed Candida auris and BAL culture showed Chryseobacterium and MDR Klebsiella with NDM, OXA-48 AND VIM+. The patient developed septic shock and required dual vaspressors. BAL galactomannan had titres of 4.5 and the patient was initiated on a mixture of ceftazidime, avibactum, voriconazole, and anidulafungin. The patient started having hemoglobinuria subsequently and acute kidney injury secondary to this and required 3 sessions of dialysis and the whole ECMO circuit was changed. Improvement in the parameters followed with normalization of blood pressure and urine output too. When there was a sigh of relief as things were getting normal patient started having heavy bouts of tracheal bleeding and bronchoscopic was done again with endobronchial biopsy showing CMV endobronchitis with focal ulceration and was started on ganciciolir. There were maleana episodes too which normalized after initiation of antivirals and CMV enterocolitis was suspected to be the cause. Now the patient is on trial off mode with decannulation being planned.

38. Clinical and Laboratory Markers of Severe Dengue Syndrome at a Tertiary Care Center in South India (Conference Abstract ID: ABS0038)
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Introduction: Dengue is an endemic vector-borne disease in India, caused by one of the four serotypes.¹ India contributed to 34% of the 96 million apparent dengue virus (DENV) infections estimated to have occurred globally in 2010.² India’s case fatality rate for dengue in a published meta-analysis was 2.6%.³ It is difficult to predict which type of patient needs admission, close monitoring, and who carries a poor prognosis just based on clinical symptoms. In this study, we aimed to study the clinical and laboratory parameters for early prognostication for the patient who was admitted to the hospital. Materials and methods: It is a retrospective observational study conducted at a care hospital, in Hitech city from 1st September 2018 to 30th September 2019. About 429 dengue-diagnosed adults patient [>18 years] based on WHO defined criteria 2012 were included in the study. Informed consent was obtained from all included patients. Their clinical and laboratory parameters were
analyzed. Standard treatment guidelines were followed in all cases. Data were analyzed for both continuous and categorical variables. 

**Results:** About 262 patients were males and 167 were females with a male-to-female ratio of 1.5 : 1. Their age ranged from 18 to 81 years with the median age was 27 years. Based on WHO criteria, severe dengue was observed in 8.4% \(n = 36\) and non-severe dengue in 91.6% \(n = 393\). Among severe dengue predominated affected age group was between 21 and 30 years \(n = 17\) [47.2%] followed by 31–40 years age group \(n = 10\) [27.8%]. About 9.3% of included patients had diabetes mellitus (DM), no association was found between DM and severe dengue \(p = 0.32\). About 8.9% of included patients had hypertension (HT), no association was found between HT and severe dengue \(p = 0.39\), about 1.6% of patients had chronic obstructive pulmonary disease (COPD), however, not found any correlation between severe dengue and COPD \(p = 0.53\). Fever as presenting symptom was noticed in 98.8% of patients. More number of severe dengue patients were presented with bleeding manifestations, bleeding was shown correlation with severe dengue \(p = 0.001\), abdominal pain also had shown a correlation with severe dengue \(p = 0.005\). No correlation was found between severe dengue and back pain, joint pain, retro-oralbital pain. Total mortality was zero in our series. 

**Conclusion:** In our series abdominal pain and bleeding presentation were found significant factors for severe dengue, therefore during dengue epidemic time patients presenting with those symptoms need proper monitoring and management to reduce the morality.

**References**


40. The Influence of the Type of Anesthesiological Support on the Effectiveness of Postoperative Analgesia in Patients with Clavicle Fractures (Conference Abstract ID: ABS0040)

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**Aim and objectives:** Investigation of the effectiveness of brachial plexus block for the achievement of adequate postoperative analgesia in patients with clavicle fractures. 

**Materials and methods:** There was performed examination of 21 patients who were operated on for clavicle fractures in the traumatology department of the Central Clinical Hospital of the State Border Guard Service of Ukraine. Patients are divided into two groups depending on the type of anesthesia. The 1st group included 11 patients (52.38%) who have been operated on under general intravenous anesthesia with tracheal intubation and mechanical lung ventilation. The 2nd
group included 10 patients (47.62%) who performed combined anesthesia with general and regional methods of anesthesia, such as brachial plexus block in the interstair space with 30 mL of 0.25% bupivacaine solution and 1 mL of 0.4% dexamethasone solution. All blocks were performed according to the same method, the time of exposition of the blocks – 15.6 ± 3.13 minutes. There were performed the analysis of the number of used analgesics, monitoring and evaluation of the effectiveness of postoperative analgesia on a Visual Analogue Scale immediately after surgery, on the 3rd hour of the postoperative period, on the 2nd and 3rd postoperative days. Results: During the induction and maintenance of anesthesia in patients of group I used 0.005% solution of fentanyl at a dose of 6.01 ± 0.42 µg/kg/h, the dosage of 0.005% solution of fentanyl was 3.14 ± 0.14 µg/kg/h in patients of the 2nd group (p = 0.000098). In the second group, 0.005% fentanyl solution was used mainly for the induction of anesthesia and immediately before the skin incision and there was no need for further administration of analgesics. The intensity of the pain syndrome for VAS immediately after operation was 21.73 ± 4.79 mm among patients of the 1st group, in the 2nd group 21.05 ± 5.05 mm (p = 0.76). The score for VAS 3 hours after surgery in the 1st group was 53.09 ± 10.87 mm, in the 2nd group it was 32.7 ± 8.01 mm (p = 0.00011), on the 2nd day the pain was estimated at 41.95 ± 6.39 mm in the 1st group and 35.85 ± 6.86 mm in the 2nd group (p = 0.048). On the third postoperative day the following indicators were obtained – 31.73 ± 4.94 mm and 30.55 ± 4.30 mm in the 1st and 2nd groups, respectively (p = 0.53). To ensure analgesia in the postoperative period there were used ketorolac 3% solution at a dose 65.0 ± 14.15 mg/day in the first group, the dose of ketorolac in the 2nd group was 32.86 ± 7.56 mg/day (p = 0.000083), or dexketoprofen 72.23 ± 9.62 mg/day and 44.45 ± 9.62 mg/day in the 1st and 2nd groups, respectively (p = 0.0017). Two patients of the first group (18.2%) needed opioid analgesics (1 mL of 2% promedol solution) in the postoperative period; patients of the second group did not need additional anesthesia. Conclusion: 1. It was found that the brachial plexus blocks reduce the dosage of fentanyl in the intraoperative period from 6.01 ± 0.42 µg/kg/h to 3.14 ± 0.14 µg/kg/h (p = 0.000098). 2. There was decreasing of the intensity of the pain syndrome for VAS from 53.09 ± 10.87 mm in the 1st group to 32.7 ± 8.01 mm in the 2nd group (p = 0.00011) at the 3rd hour and from 41.95 ± 6.39 mm in the 1st group to 35.85 ± 6.86 mm in the 2nd group on the 2nd postoperative day (p = 0.048). 3. Significantly lower doses of ketorolac (p = 0.000083) and dexketoprofen (p = 0.0017) were used after performing brachial plexus blocks. 4. These results approve the effectiveness of using the brachial plexus blocks during surgery to maintain adequate postoperative analgesia.

41. Characteristic of Quantitative and Qualitative Indicators of Postoperative Pain in Patients with Limbs Injuries (Conference Abstract ID: ABS0041)
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Aim and objectives: Investigation of the influence of factors that cause the formation of chronic pain syndrome in patients with injuries of the upper and lower extremities. Materials and methods: The study is carried out on the basis of the Injury Clinic of the Main Military Clinical Hospital of Armed Forces of Ukraine and the traumatology department of the Central Clinical Hospital of the State Border Guard Service of Ukraine. We examined 25 patients with injuries of the upper and lower extremities, performed the analysis of the number of used analgesics and the adequacy of analgesia during surgery and in the postoperative period, assessed the effectiveness of analgesia on a Visual Analogue Scale in the first 3 postoperative days. For the subjective characterization of pain, patients were interviewed using the short form of the McGill questionnaire (SF-MPQ), the DN4 questionnaire was used to detect neuropathic pain. Results: According to the analysis of anesthesia, combined anesthesia with general and regional methods was used in 15 patients (60%), who formed the 2nd group, in 10 patients (40%) only intravenous anesthesia was performed, they formed the 1st group; the average duration of surgery in the first group was 1 h 28 ± 32 minutes, in the second group it was 1 h 52 ± 46 minutes. There was a significant difference in the intensity of pain for VAS at 3 hours after surgery – 58.75 ± 10.87 mm in the 1st group and 32.7 ± 8.01 mm in the 2nd group (p = 0.00011) and after 24 hours – 48.95 ± 6.39 mm in the 1st group and 35.85 ± 6.86 mm in the 2nd group (p = 0.044). According to the general assessment of the intensity of postoperative pain for the first 3 days, the following results were obtained: 3 patients (12%) characterized the pain as minimal, 14 patients (56%) – as moderate, severe pain was felt by 7 patients (28%), 1 patient (4%) experienced very severe pain. Characteristics of pain in the short form of the McGill questionnaire (SF-MPQ) showed that 13 patients (52%) described the pain as acute, burning, and severe, 7 patients (28%) described the pain as acute and severe, 3 patients (12%) experienced burning and sharp pain and only 2 patients (8%) experienced aching, mild pain. The total rank pain index was 12.25 ± 2.89. According to the DN4 questionnaire, the total score among the patients was 1.54 ± 0.72, so neuropathic pain in patients at this stage of the study was absent. Conclusion: 1. The main type of anesthesia in patients with limb injuries was combined anesthesia with the simultaneous use of general and regional methods. 2. Peripheral nerve blocks reduce the intensity of postoperative pain for VAS for 3 hours after surgery from 58.75 ± 10.87 mm in the 1st group to 32.7 ± 8.01 mm in the 2nd group (p = 0.00011) and after 24 hours – from 48.95 ± 6.39 mm in the 1st group to 35.85 ± 6.86 mm in the 2nd group (p = 0.044). 3. The obtained pain descriptors on the short form of the McGill questionnaire are typical for acute postoperative pain at this stage of the study; the survey of the DN4 questionnaire also excludes the presence of neuropathic pain. 4. We plan to continue examining patients 3–6 months after discharge from the hospital to diagnose neuropathic pain and identify factors that cause the development of chronic pain syndrome.

42. Olanzapine Induced Neuroleptic Malignant Syndrome: A Case Report (Conference Abstract ID: AB50042)
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Neuroleptic malignant syndrome (NMS) is a rare but potentially life-threatening complication associated with the use of neuroleptic medications.1 It was first described by Delay et al. which is also called “akinetic hypertonic syndrome.” It is characterised by fever, altered mental status, muscle rigidity, and autonomic dysfunction2; however, the features of this syndrome remain controversial.2
Here, we report a case of neuroleptic malignant syndrome with atypical features. **Case report:** A 58-year-old man, known case of systemic hypertension with old ischaemic stroke with bipolar affective disorder, was on tab. amlodipine 5 mg OD, tab. olanzapine 5 mg, and tab. trihexyphenidyl 2 mg for the last 5 years. Two days before admission, he developed altered sensorium and drowsiness along with tremors in both hands and feet. While in hospital, he developed a fever with rigors. He was drowsy, with rigidity and resting tremors in all 4 limbs. Tab. olanzapine was stopped while tab. trihexyphenidyl was continued. On examination, the patient was febrile with temp. of 102°F, pulse rate of 120/min, Blood pressure of 110/70 mm Hg. His CNS examination revealed GCS of 9/15 (E4V2M3), lead pipe rigidity in all four limbs, tremors in both hands, brisk deep tendon reflexes, and equivocal plantars. His total leukocyte count was 19,950/cumm. Peripheral smear did not reveal malarial parasite and rapid diagnostic kits were negative. His blood urea was 69 mg/dL, creatinine was 2.2 mg/dL and serum electrolytes were normal. His urine routine and culture, liver function test, arterial blood gas analysis, and thyroid function test were normal. His random blood sugar was 135 mg/dL. Examination of cerebrospinal fluid (CSF) revealed clear fluid with 2 lymphocytes, proteins 24.5 mg/dL, sugar 92 mg/dL, and ADA 3.3 U/L. There was no evidence of microorganisms on gram stain, fungal elements, and acid-fast bacilli on Ziehl–Neelsen's stain. His chest X-ray was normal. Computed tomography (CT) of the brain revealed few chronic lacunar infarcts in bilateral gangliocapsular regions. A provisional diagnosis of Parkinson's plus syndrome with septicemia with AKI was made. He was started on antibiotics, antipyretics, and IV fluids. His creatinine improved but his total leukocyte count was persistently high with persistent fever. He developed generalized tonic-clonic seizures, generalized tremors, and profuse sweating. His rigidity worsened. His creatinine phosphokinase (CPK) was 1096 U/L. Diagnosis of neuroleptic malignant syndrome was made in view of persistent fever with a history of olanzapine use with leukocytosis and elevated CPK. He was started on tablet amantadine 100 mg BD per orally (through Ryle's tube), IV levetiracetam 500 mg BD, IV lorazepam 1 mg HS, tablet trihexyphenidyl was continued. Supportive measures were given. He was slightly better on the 2nd day of starting amantadine. On the 5th day of starting amantadine, all the symptoms and signs like rigidity, tremors, sweating were significantly improved and the patient became afebrile. He became conscious, oriented, was able to recognize his relatives, and started taking orally. His repeat CPK levels gradually decreased through 1096–208 U/L. He was finally discharged on day 10 with advice to continue amantadine, trihexyphenidyl, and his regular medications. He was on olanzapine 5 mg for 5 years, dehydration and decreased oral intake may have precipitated NMS. There are many case reports of olanzapine-induced NMS, but NMS after prolonged usage of the same dose of olanzapine is reported rarely. **Conclusion:** This case suggests that atypical antipsychotics like olanzapine can cause NMS even in lower doses if precipitating factors are present. This rare and potentially hazardous complication of olanzapine should not be ignored as olanzapine has been prescribed by many primary caregivers and general physicians. NMS is a dangerous condition and has been seen in patients without proper psychiatric guidance. It is mostly not recognized, not diagnosed, or not treated properly. To reduce the potential dangers of this syndrome, it should be better understood. **Financial support and sponsorship:** Nil. **Conflicts of interest:** There are no conflicts of interest.

**References**


43. A Case Report of Multiple Myeloma (Conference Abstract ID: ABS0043)

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**Introduction:** Multiple myeloma is a clonal proliferation of plasma cells with multiple osteolytic lesions. The Median age at diagnosis is 69 years. Males are more commonly affected than females. It constitutes 13% of all the Haematological Malignancies. In 70% of cases, Bone Pain is the most common symptom. 25% Patients presents with Renal failure. Disease is associated with several chromosomal abnormalities. Prognosis in these patients can be assessed by ISS and Cytogenetic changes. **Case:** A 44 years old male patient with no comorbidities presented with generalized weakness and PR bleed since 2–3 months, chest pain since 1 month, fever and difficulty in breathing since 3 days. On examination he had pallor, ecchymotic patches over bilateral forearm and a bony mass over left 3rd rib. He had a palpable spleen and on auscultation bilateral Infraaxillary and Infrascapular crepitations were heard. Per Rectal examination was normal. His investigations had anaemia with thrombocytopenia, Activated Lymphocytes, Rouleaux formation on Peripheral smear. Hypoalbuminaemia and hypercalcaemia. Biopsy from the bony mass showed evidence of mononucleate plasmacytoid cells and Bone marrow Aspiration report was also suggestive of 90–95% plasmacytosis. M band formation on serum Protein electrophoresis was seen. Also he had elevated serum light chains and Beta2 Microglobulins. Chest X ray revealed Bilateral Pneumonia. Skull X ray showed classical punched out lesions. He was diagnosed as a case of Multiple Myeloma. **Conclusion:** In our case Patient had come with complications of Multiple myeloma. The most typical thoracic manifestation of Multiple Myeloma are bony involvement of the thoracic cage. Though its incidence is common in elderly patients, can also be found among middle aged.
Introduction

MM represents a malignant proliferation of plasma cells derived from a single clone. Usual age of presentation is 69 years with male predilection. It accounts for 1% of all malignancies and 10% of all hematological Malignancies. Multiple Myeloma and osteosarcoma combined accounts for 50% of all primary bone malignancy. The tumor, its products and the host response to it result in a number of organ dysfunctions and symptoms, including bone pain or fractures, renal failure, hypercalcemia, susceptibility to infection, anaemia, clotting abnormalities. There are 8 types of Multiple Myeloma which includes Light chain Myeloma, Non Secretory Myeloma, Solitary Plasmacytoma, Extramedullary Plasmacytoma, Monoclonal Gammopathy of Undetermined Significance, Smoldering Multiple Myeloma, IgE and IgD Myeloma.

A 44 years young male patient named Raju waman Radekar got admitted in MICU of Mayo Hospital Nagpur with chief complaints of

- Generalised weakness and bleeding PR since 2–3 months
- Chest pain and back pain since 1 month
- Fever cough and difficulty in breathing since 3 days

On examination Patient was conscious oriented cooperative moderately built and moderately nourished. On Admission he had tachycardia, tachypnoea, SPO2: 98% on Bag and mask with 15 lts of 02, with normal blood pressure. On admission he had pallor. A Bony swelling was present along the left 3rd rib in the MCL measuring 1.5×1.5 cm, hard in consistency, fixed non mobile and non tender.

On Respiratory examination Bilateral infraaxillary and infrascapular crepitations heard. Per Abdomen examination had mild splenomegaly. Heart sounds were normal. CNS had no focal neurodeficits. On Day 2 of his illness, he developed ecchymotic patches over both forearm. His blood investigasions were

- CBC- Hb-4.9, Plt-23,000, TLC-12500, MCV-97, RBC-1.64 million, Lym-31%, Neutrophils-54%, HCT- 15.6, MCHC-31.7, MCH-30.5
- Peripheral Smear-Erythrocytes: Rouleaux formation seen. Polychromasia + Spherocytes+ Leukocytes: Activated lymphocytes seen. Mild Monocytosis +. Occasional Atypical cells seen + Platelets reduced on smear

His ABG done on admission had PH -7.40, PO2-53.9, PCO2-37.6, HCO3-22

Introduction

Sputum culture: Klebsiella pneumonia growth. Sputum CBNAAT MTB not detected. His RTPCR test was negative twice. He received 2 whole blood, 4 platelets and 2 FFP transfusions.

Patient was put on NIV on Day4 of his illness and weaned off gradually.

His repeat ABG on 7th Day of illness PH -7.48, PO2-151, PCO2-38, HCO3-26.2.

KFT-urea 74, creat 2.2, which became normal gradually. LFT- hypoalbuminemina(2.14) with normal enzymes and bilirubin levels. Serum calcium levels were elevated to 14 mg/dl.

On Histological examination of Bony swelling showed fibrocollagen, adipose tissue, congestion of blood vessels and plasma cell infiltration.

Bone marrow aspiration s/o Plasmacytosis of marrow with increase in lymphoplasmacytic cells.

Serum Beta2 microglobulin levels-9697ng/dl(670-2143)

Total IgG-6420mg/dl(700-1600)
In the present case initial high levels of total serum proteins, bone pain, Bony nodules, hypercalcaemia, anaemia, Acute renal failure. The most important diagnostic finding is the presence of M protein in serum and elevated. Serum Beta2 microglobulin and serum free Lambda light chains suggests existence of Monoclonal Gammopathy. Punched out lesions over skull. Pneumonia due to hypogammaglobulinaemia.

This patient fulfills the “Diagnostic criteria” of Multiple Myeloma. Risk stratification can be made by identifying chromosomal abnormalities like del(17p), t(4;14), t(14;16), t(14;20), del13, amp1q34.

**Serum Free Kappa**: 7.86 (3.3-19.4)  
**Serum Free Lambda**: 463 (5.71-26.3)

**Discussion**

The patients with Multiple Myeloma are at increased risk of infection due to immunosuppressive nature of disease process. Risk factors for infection include leukopenia, T cell immunodeficiency, hypogammaglobulinaemia, renal failure disease evolution with mutational changes, clonal evolution and heterogeneity. The risk of infection is higher within first 3 months of diagnosis and infections contribute to early morbidity and mortality in patients with MM.

In the present case initial high levels of total serum proteins, bone pain, Bony nodules, hypercalcaemia, anaemia, Acute renal failure. The most important diagnostic finding is the presence of M protein in serum and elevated. Serum Beta2 microglobulin and serum free Lambda light chains suggests existence of Monoclonal Gammopathy. Punched out lesions over skull. Pneumonia due to hypogammaglobulinaemia.

This patient fulfills the “Diagnostic criteria” of Multiple Myeloma. Risk stratification can be made by identifying chromosomal abnormalities like del(17p), t(4;14), t(14;16), t(14;20), del13, amp1q34.
As his Beta2M is 9.6mg/dl and $S$ albumin is 2.14, he presented to us at III stage of disease with median survival of 29 months according to International Staging System.

**Conclusion:**
In High risk transplant eligible patient, Induction therapy with Lenalidomide, Borezomib, Dexamethasone(RVD)/Bortezomib, Cyclophosphamid, Dexamethasone(VCD) till maximum effect. If no response seen then Alternative Regimen like Daratumumab with RVD can be initiated followed by ASCT(autologous stem cell therapy). Maintenance therapy with bortezomib and lenalidomide.

**References**

44. Teaching Bundle Care Approach to Paramedics with a Validated Teaching Module: An Intensivist Perspective to Prevent Ventilator-associated Events (Conference Abstract ID: ABS0044)
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**Fig. 1:** Pre and Post-test analysis

**Fig. 2:** Directly observed procedural Skills

**Fig. 3:** Feedback was obtained by the Likert scale
was done by directly observed procedural skills (DOPS) which included VAP bundle (suctioning/subglottic suctioning, oral care, daily sedation intervals, head-up positioning, daily spontaneous breath trials, ventilator handling, DVT prophylaxis, stress ulcer prophylaxis) before and after training. After this, all subjects were asked to give feedback on confidence in applying the teaching module in ICU nursing care. Pre-test and post-test analysis was done Wilcoxon signed-rank test by median (IQR). DOPS pre- and post-workshop analysis was done by Mann–Whitney U test. Subgroup analysis was performed using a paired and unpaired t-test. **Results:** Pre and post-test analysis (maximum score of 20) showed a median (IQR) of 6 (4–8) and 13 (11–15), respectively, with a p value of 0.0001 (Fig. 1). DOPS score pre-workshop 59% of subjects were having below and borderline expectation and 41% are meeting expectations and above expectations. Post-workshop an improvement in DOPS with 29% of subjects were having below and borderline expectation and 71% are meeting expectations and above expectations (Fig. 2). p value 0.001. Subgroup analysis done among individual components of bundle, significant improvement was found among suctioning, oral care, and ventilator handling with p values 0.03, 0.04, and 0.043, respectively. Feedback was obtained by the Likert scale (Fig. 3) subgroup analysis revealed subjects were more satisfied with debriefing sessions with 8% graded highly unsatisfied and unsatisfied, 23% were neutral, 69% were satisfied and very satisfied significant. p value = 0.043. The reflection feedback category revealed 6% as highly unsatisfied and unsatisfied, 25% were neutral, 67% were satisfied, and very satisfied significant with a p value of 0.04. **Conclusion:** A validated teaching module on ventilator-associated events improved knowledge and skill knowledge acquisition by paramedics. Debriefing sessions significantly improved the efficacy of the module which improved confidence in applying the bundle care approach in preventing VAE.

45. Evaluation of Quality of Sleep and Barriers to Good Sleep among Non-ventilated Critically Ill Patients (Conference Abstract ID: ABS50045)

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**Introduction:** Adequate sleep is crucial for the well-being and recovery of acutely ill patients in the intensive care unit (ICU). Patients in ICU frequently experience qualitative and quantitative sleep disruption leading to sleep deprivation and its adverse sequelae. This disruption in sleep is likely exaggerated in non-ventilated ICU patients who are usually not on sedation. The Richards-Campbell Sleep Questionnaire (RCSQ) is derived from five visual analogue scales (VAS) RCSQ and has been validated for assessing the quality of sleep in critically ill patients. Aim and **objective:** To assess the quality of sleep in non-ventilated critically ill patients and to compare the patients’ perception of quality of sleep with that of nurses’. **Materials and methods:** The study is a prospective observational study conducted among non-ventilated patients in our tertiary critical care unit between September 2020 and July 2021. After ruling out delirium in the patient using the CAM-ICU delirium screening tool, the perception of sleep quality was assessed using the modified RCSQ, from the patient and the night-shift nurse who provided care. The questionnaire was administered to the nurse before the completion of their 12-hour night shift and to the patient, on the morning after the nurse’s evaluation. The data collection was done independently in a blinded manner. The sleep quality assessments were performed twice during the ICU stay of the patient, first, after 24 hours of admission, and the second on day 5 or before ICU discharge whichever was earlier. In addition to RCSQ data, baseline demographics and severity of the illness at admission were recorded. Factors that could potentially contribute to sleep disruption were categorized as patient-related factors, environmental factors and health-support techniques, and relevant information collected. **Results:** 69 patients were analyzed with a median age of 61 years and an admission SOFA score of 4. The average sleep score of study patients during the first assessment was 62.2, but increased to 70.4 at the time of the second assessment. There were significant differences between the first and second RCSQ scores of the patients, in all variables (p < 0.05) indicating an improvement in the quality of sleep in the ICU over time. We also found that patients perceived a significantly lower depth of sleep (First assessment – Patient’s mean = 60.5 vs Nurse’s mean = 65.9, p = 0.017; Second assessment- Patient’s mean = 67.5 vs Nurse’s mean = 74.4, p < 0.001) and higher degree of noise in comparison to that of the nurses (First assessment – Patient’s mean = 54.4 vs Nurse’s mean = 63.6, p < 0.001; Second assessment- Patient’s mean = 69.6 vs Nurse’s mean = 79.4, p < 0.001). **Conclusion:** Patients admitted to our ICU overall reported only a moderate quality of sleep. Reported sleep scores improved significantly over time. Nurses overestimated sleep depth and underestimated noise levels in comparison to patients.

46. To Study the Association of Vitamin D Deficiency with ICU Mortality and Morbidity in Moderately-severe COVID-19 Patients (Conference Abstract ID: ABS50046)

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**Introduction:** The prevalence of COVID-19 is determined by the presence of pneumonia, severe ARDS, cytokine storms, and small vessels thrombosis, all involves underlying inflammation. Vitamin D is a fat-soluble vitamin with immuno-modulating and anti-inflammatory properties. The high prevalence of vitamin D deficiency is usually due to inadequate sunlight exposure, sedentary lifestyle, diet poor in vitamin D, and traditional clothing. Vitamin D deficiency is a modifiable risk factor their identification and management can improve outcomes. **Materials and methods:** This was a prospective observational single centre study of moderately-severe COVID-19 patients. All consecutive, moderately-severe COVID-19 patients with ICU stay >48 hours were included. Exclusion criteria: consent refusal, pregnant and lactating mothers, Age <18 years, post-cardiac arrest resuscitated patient before ICU admission, patient on multivitamin or Neutraceuticals supplements, chronic diarrhea, and cancer patients. Based on vitamin D levels on ICU admission, patients were stratified into two groups, i.e., ≤20 ng/mL deficient and >20 ng/mL non-deficient group. After demographic data, we collected data of underlying disease; cause of admission; APACHE II on admission and daily SOFA scoring, various morbidities during ICU stay (mechanical ventilation, inotropes/vasopressor, nosocomial infections, etc.), length of ICU stay, ICU mortality and 30
49. Assessment of Inter-observer and Intra-observer Reliability of Capillary Refill Time among Patients Admitted in a Multidisciplinary ICU (Conference Abstract ID: AB50049)

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**Aim and objective:** To evaluate the inter-observer and intra-observer reliability of capillary refill time. **Materials and methods:** A prospective observational study was conducted on 100 critically ill patients admitted to Sri Ramachandra Medical Centre. **Inclusion criteria:** All patients above 18 years of age irrespective of their baseline hemodynamic status were included in this study. **Exclusion criteria:** Patients below 18 years of age. Patients with peripheral vascular disease. Patients not willing to give consent. **Method:** Capillary refill time (CRT) was measured by elevating the right upper limb above the level of the heart and applying a firm pressure to the ventral surface of the right index finger (distal phalanx) for 10 seconds. The pressure applied was just enough to remove the blood at the tip of the physician's nail as illustrated by the appearance of a thin white distal crescent (blanching) under the nail. Time for the return of normal colour was measured using a stopwatch. The CRT of each patient was measured thrice, i.e., twice by the same clinician and once by another clinician involved in patient management. Measurements were taken at 3 minutes intervals between each other. **Results:** Intraclass correlation coefficient (ICC) was used to assess for inter-observer and intra-observer reliability. Intraclass correlation coefficient estimates and their 95% confidence intervals were calculated using SPSS based on a single-rating, absolute-agreement, two-way random-effects model. ICC for interobserver reliability was 0.758 (95% CI 0.612–0.855) and the ICC for intra-observer reliability was 0.835 (95% CI 0.728–0.903). **Conclusion:** Based on the results of the study the inter-observer and intra-observer reliability of capillary refill time was found to be moderate to good.
50. Macklin Effect in the Current Pandemic: A Pathological Sequelae or Ventilator-Associated Lung Injury (Conference Abstract ID: AB50050)

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Aim and background: SARS-CoV-2 pandemic questioned many basic concepts in medicine. COVID-19 affects many organ systems despite the lung being the primary affected organ. ARDS management is challenging and a new complication during the management adds to the burden. Macklin described a pathophysiological process by which air escaped through the ruptured alveolar basement membrane causing pneumomediastinum. The occurrence of air leak syndromes (ALS) in COVID-19 made us investigate the disease and its association with the complication. Objective: To observe the clinicopathological profile of patients who developed air leak syndrome during the second wave of the pandemic. Materials and methods: A retrospective analysis was conducted on SARS-CoV-2 patients admitted to ICU due to ARDS. The study included patients admitted from March to June 2021 with rTPCR positive test for SARS-CoV-2 illness and diagnosed to have ARDS as defined by the Berlin criteria. We analyzed 195 cases admitted in the ICU who met the above criteria and received protocolised care as per national and institutional guidelines. Cases who received ventilatory support either as HFNO (high flow nasal oxygenation), NIV (non-invasive ventilation), or invasive mechanical ventilation as per ARDS NET protocol and developed ALS were included. Demographic and clinical profiles of patients and laboratory parameters like acute phase reactants, haemogram, and serum creatinine were analysed. Results: 5.6% of patients were diagnosed to have air leak syndrome, which includes subcutaneous emphysema, pneumomediastinum, pneumopericardium, and pneumothorax. 81% of the cases were men. The average age was 44.8 years. 90% of the patients had no pre-existing lung pathology or respiratory comorbidity. 81.8% did not have a documented history of smoking. 63.33% of patients had other preexisting co-morbidities. 27.2% of patients had more than one comorbidity with diabetes mellitus being the most common. The average time to develop air leak syndrome was 6 days. 81% of the patients received mechanical ventilation, 2 patients were only on HFNO. 90% of the patients were prone in view of severe ARDS. From air leak syndromes mentioned above, 72.2% developed pneumothorax, 63.3% of the patients developed subcutaneous emphysema, 54.5% of the patients developed pneumomediastinum, and 9% developed pneumopericardium. 1 patient (9%) developed the complete spectrum of ALS. 63% of the patients developed 2 or more entities of the air leak, i.e., subcutaneous emphysema, pneumomediastinum, pneumopericardium, and pneumothorax. Acute phase reactants were elevated in all patients who developed ALS. There was neutrophil predominance in the haemogram. Only one patient developed AKI. Another compelling finding was the development of secondary infection, the majority was respiratory tract infections (81%) followed by urinary tract infections. Candidiasis was observed in 36.6% of patients. The average duration of stay was 21.6 days. The mortality rate was 63%. 4 patients were discharged who had an average time to resolution of 8 days. Conclusion: COVID-19 is majorly a self-limiting disease. Secondary bacterial infection and poor oxygenation was major finding in our study. Development of ALS in a previously normal lung with no preexisting lung pathology points towards the need to conclude ALS and viral pneumonias.

51. A Rare MDR Emerging Pathogen in Intensive Care Units: A Potential Nemesis (Conference Abstract ID: AB50051)

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Aim and objective: Analysing antibiotic susceptibility pattern of an extensively drug-resistant and emerging pathogen to explore treatment options. Introduction: The genus Myroides comprises gram-negative, non-motile, and non-fermenting bacteria. Myroides species are rare clinical isolates and are often not considered pathogenic. However, the organism has been isolated from urine, blood, wounds, and respiratory secretions. Immunocompromised patients are at higher risk for Myroides infection. Diabetes, catheterization, and ICU stay may increase the chances of acquiring Myroides infection. Materials and methods: Aseptically collected mid-stream urine specimens collected from patients in intensive care units were cultured as per standard protocols to look for significant bacteriuria. Identification and drug sensitivity were performed on VITEK® 2 Compact. Results: We present a case series of a total of 10 Myroides spp. reported from urine samples of patients. All the patients were catheterized residing in intensive care units. Extensive drug resistance was seen in antibiotic sensitivity results. All the isolates were sensitive to minocycline and were resistant to beta-lactams (including extended-spectrum cephalosporins and beta-lactamase inhibitors), monobactams, carbapenems, aminoglycosides, fluoroquinolones, polymyxins, and sulfonamides. The empirical therapy with fluoroquinolones and aminoglycoside was unsuccessful. In our patients, prolonged ICU stay and varying risk factors could have been instrumental in causing these multi-drug resistant Myroides urinary infections. Repeated hospital admissions of the patient might represent an independent risk factor for colonization and infection with multi-resistant microorganisms such as Myroides spp. The source of the infection was not determined, but these might be related to a breach in bundle care protocols related to catheter care. Conclusion: Although Myroides spp. are uncommon pathogens, clinicians should be cognizant of the ability of Myroides to cause prolonged UTI outbreaks, especially in immunocompromised patients. The selection of appropriate antibiotic therapy to treat the infections caused by Myroides spp. is difficult due to the production of a biofilm and the organism's intrinsic resistance to many antibiotic classes. Accurate identification of Myroides spp. infections for rapid and prompt treatment considering they are extensively resistant organisms.

52. Efficacy of Melatonin in Prevention of Delirium in Critically Ill Adults: A Randomised Controlled Trial (Conference Abstract ID: AB50052)

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blocks have traditionally been employed but they are associated with complications. Optimal pain management following rib fracture and clear secretions effectively, which will minimize pulmonary pain relief allows the patient to breathe deeply, avoid intubation, pneumonia, which may require ventilatory support. Adequate compromised pulmonary function causing hypoxaemia or Pain associated with rib fractures can result in

**Introduction**: Disruption of circadian rhythm and consequent sleep disturbance predispose to the development of intensive care unit (ICU) acquired delirium. We aimed to determine whether prophylactic melatonin decreases the prevalence of delirium in critically ill adults. **Aim and objective**: Primary outcomes were the prevalence of delirium at 24 hours of ICU stay. Secondary outcomes were the prevalence of delirium on days 3 and 7, ICU mortality, length of ICU stay and duration of mechanical ventilation, and Glasgow outcome scores (at discharge). **Materials and methods**: In this open-label randomized controlled trial, critically ill adults received either usual standard care alone (Group C) or in combination with enteral melatonin 3 mg once a day at 9 PM (Group M). Concealment of allocation was done by serially numbered opaque sealed envelopes. Patients, outcome assessors, and data analyzer were blinded. Multivariable logistic regression was used to develop models to predict delirium in ICU. **Results**: 108 patients were included in the final analysis with 54 patients in each group. At 24 hours of ICU stay, there was no difference in the prevalence of delirium between groups M and C (29.6 vs 46.2%; RR: 0.6, 95% CI: 0.38–1.05; p = 0.11). None of the secondary outcomes showed a statistically significant difference between the two groups. SOFA score on day 1 was an independent risk factor for developing new-onset delirium in ICU with an adjusted odds ratio of 2.60 (95% CI: 1.24–5.45; p = 0.01). **Conclusion**: Enteral melatonin 3 mg is not more effective in decreasing the prevalence of delirium compared to standard care in critically ill adults.


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**Introduction**: Pain associated with rib fractures can result in compromised pulmonary function causing hypoxaemia or pneumonia, which may require ventilatory support. Adequate pain relief allows the patient to breathe deeply, avoid intubation, and clear secretions effectively, which will minimize pulmonary complications. Optimal pain management following rib fracture requires a multimodal approach including regional anaesthesia. The ultrasound-guided erector spinae plane (US-ESP) block has become the first-line interventional analgesic technique of choice in our institution as it provides excellent analgesia while being simpler and safer to perform. Thoracic epidural and paravertebral blocks have traditionally been employed but they are associated with adverse effects and are often not feasible in the presence of conditions such as coagulopathy, hemodynamic instability, and other associated injuries. Here, we present a case series of erector spinae plane block for control of pain in six patients with multiple rib fractures. **Case series**: Six patients were selected with multiple rib fractures admitted to our emergency ICU from March 2021 to July 2021. Informed written consent was taken from all patients. Any infections at the site of needle insertion, coagulopathy, and allergy to bupivacaine were ruled out. All patients were educated about 11 points numerical rating score (NRS) for pain assessment and incentive spirometry. Their demographic parameter, mode of injury, any associated injuries and baseline vital parameter, pain score, and incentive spirometry volume were recorded. Under the strict aseptic and antiseptic conditions, US-ESP was administered at the level of the 5th thoracic vertebra on the affected side, and the catheter was secured for continuous analgesia. Bolus of 20 mL 0.5% bupivacaine was administered through the catheter followed by 10 mL 0.25% bupivacaine/hour. All patients also received systemic analgesia like paracetamol or NSAIDs and/or opioids as per the need, during the period of erector spine plane catheter infusion. The erector spine plane catheter was removed once pain could be adequately managed with multi-modal oral analgesia. Heart rate (HR), mean arterial pressure (MAP), incentive spirometry volume measured, and NRS pain scores while breathing after administration of US-ESP were recorded at time intervals of 0, 4, 8, 12, 24, and 48 hours after block completion. Demographic parameters of all six patients are represented in Table 1. **Observation**: We found that after the US-ESP block, patients remained hemodynamically stable and pain-free. Total opioid consumption has also decreased. There was a significant improvement in incentive spirometry volume by around 500 mL. We did not encounter any complications associated with US-ESP block. **Conclusion**: The US-ESP block is a safe and effective alternative to more-established regional analgesic techniques for adequate pain relief and improving inspiratory capacity associated with multiple rib fractures.

**References**

56. Self-inflicted Stroke-posterior Inferior Cerebellar Artery (PICA) Syndrome, A Rare Complication of Near Hanging (Conference Abstract ID: ABS0056)

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Aim and background: Suicidal hanging is a common method of self-harm in India. Neurological complications are the main cause of long-term morbidity. Neurological deficits vary in cases of hanging and can range from retrograde amnesia to stroke and brain death. Early identification of the lesion by focused neurological examinations and timely CT angiography could help plan the modality of treatment. Case: A 40-year-old male was brought to ER with an alleged history of self-harm caused by suicidal hanging. His GCS was 7/15, his heart rate was 118 bpm, his blood pressure was 110/70 mm Hg, and his oxygen saturation was 88% on room air with copious oral secretions. Lung auscultation elicited bilateral diffuse crepitations. The provisional diagnosis was pulmonary edema with hypoxic respiratory failure secondary to alleged hanging. He was intubated after cervical spine stabilization. MRI brain and cervical spine were done post resuscitation and he was discharged home post neurorehabilitation and psychiatric evaluation.

Discussion: neurological and pulmonary complications are common in the case of near hanging. Stroke should be suspected in a patient who presents with a GCS of <7. Neurological dysfunction is a serious complication of hanging. This can manifest at admission or a few days later. Cognitive decline is only evident on detailed examination. Strokes secondary to thrombosis or dissection of the carotid and vertebral arteries have been reported. Data regarding posterior circulation stroke causing Wallenberg’s syndrome is extremely limited. Acute ischemic infarct in the PICA is an extremely rare finding. Imaging of choice is CT angiography as it helps surgical planning, medical management prevents cerebral embolisation from the dissected artery and also occlusion, but bleeding could be a risk. Stent placements could be challenging. Conclusion: Ischemic neurological insults post hanging is not a common occurrence with >80% of the cases recovering almost completely without any morbidity. Close neuromonitoring and low threshold for CT/MR angiography post hanging in case of suspected neurological abnormality could help reduce the length of stay in the hospital and decrease long-term morbidity.

57. Atypical Antipsychotics Safety Profile: A Dilemma! (Conference Abstract ID: ABS0057)

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Introduction: Schizophrenia is a chronic, progressive illness associated with a significant risk of developing a variety of somatic disorders. Previous research has revealed that all generations of antipsychotics can produce a range of somatic disturbances, which can lead to significant physical problems. As a result, we must pay close attention to the influence of antipsychotics on the development of specific physical symptoms during long-term therapy. Comparatively, atypical antipsychotics are considered safer than typical antipsychotics. Toxic hepatitis is a liver inflammation caused by a variety of substances, including alcohol, drugs, and different chemicals. It might happen within hours or days after being exposed to a hazardous substance, or it can happen months or years later and can be idiosyncratic. Hepatocellular injury caused by quetiapine is a very uncommon occurrence. It is an atypical antipsychotic that has been shown to be helpful in the treatment of both negative and positive psychotic symptoms. It has a minimal side effect profile, despite its large therapeutic dose of up to 750 mg/day. Aims and objectives: To document a rare side effect of atypical antipsychotic therapy. Case material: We report a 23-year-old male, diagnosed case of schizophrenia, presented with jaundice and altered sensorium. The clinical presentation, and test data supported diagnosis of drug-induced liver damage, after ruling out other causes. We also noticed hyperglycemia in this patient secondary to use of risperidone and quetiapine. Patient improved on withdrawal of drug and conservative management. Patient was discharged on day 14, with normal clinical profile. Follow-up study was eventful. Conclusion: Our goal was to pay attention to the risks behind prescribing a combination of antipsychotics to prevent the development of undue disease in psychiatric patients and demand follow-up care.

58. Specificities of Correlation Indicators of the Hemostasis System and Leukocytic Index of Intoxication in Patients with Out-of-Hospital Pneumonia on the Background of COVID-19 (Conference Abstract ID: ABS0058)

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Foreword: Pneumonia remains an important medical and social problem at the beginning of the 21st century as well. This is due to its high prevalence, fairly high rates of disability and mortality, as well as significant economic expenditures for treatment. The incidence of pneumonia in different regions of the world ranges from 3.5 to 15 cases per 1 thousand population. The mortality rate from pneumonia in different countries of the world ranges from 2–3 to 25%. Pneumonia takes the first place among the causes of lethality and mortality from infectious diseases and the sixth one – among all the causes of death and the fourth – among
causes of death in patients older than 65 years. **Objective of research:** Find out the peculiarities of correlation indicators of the hemostasis system and leukocytic index of intoxication in patients with out-of-hospital pneumonia on the background of COVID-19. **Materials and methods of research:** Based on NMMCC «MMCH», a retrospective review analyzed 66 maps of inpatients with out-of-hospital pneumonia associated with COVID-19. The average age of the patients included in the study was 38.9 ± 0.7 years for males [66% (n = 37)] and 39.3 ± 0.83 for females [44% (n = 29)]. The leukocyte intoxication index (LII) was calculated and the severity of pneumonia was assessed according to the PSI scale (Pneumonia Severity Index, 2004). **Results of the personal research:** After dividing the patients according to the level of LII and PSI stratification class, we identified three groups of patients: with mild intoxication (n = 30, LII – 2.13 ± 0.09), which corresponded to class II on PSI (61.5 ± 6.5); with intoxication of moderate severity (n = 31, LII – 4.83 ± 0.29), which corresponded to class III for PSI (79.4 ± 7.4); with severe intoxication (n = 5, LII – 10.11 ± 0.53), which corresponded to class IV PSI (110.4 ± 11.4). Assessing the severity of pneumonia on the PSI and LII scale [in the first group (LII – 2.13 ± 0.09, PSI – 61.5 ± 6.5), in the second group (LII – 4.83 ± 0.29, PSI – 79.4 ± 7.4), and in the third group (LII – 10.11 ± 0.53, PSI – 110.4 ± 11.4)], we found a direct strong veracious correlation by Pearson's method (r = 0.56; p < 0.05) between the level of leukocyte intoxication index and the level of PSI. In addition, it was found that the increasing degree of intoxication significantly increases the value of LII (p < 0.05). When assessing changes in the coagulogram of patients depending on LII (in the first group of LII – 2.13 ± 0.09, PI, % – 91.3 ± 0.86, APTT, c – 33.38 ± 0.2, fibrinogen A, g/L – 3.37 ± 0.08, fibrinogen B, qualitatively – 1.6 ± 0.14, activated plasma recalcification time, c – 84.5 ± 1.64, in the second group of LII – 4.83 ± 0.29, PI, % – 84.6 ± 0.98, APTT, c – 31.96 ± 0.19, fibrinogen A, g/L – 3.69 ± 0.05, fibrinogen B, qualitatively – 2.48 ± 0.13, activated plasma recalcification time, c – 94.19 ± 1.31, in the third group LII - 10.11 ± 0.53, PI, % – 83 ± 2.0, APTT, c – 31.42 ± 0.26, fibrinogen A, g/L – 3.93 ± 0.11, fibrinogen B, qualitatively – 3.0 ± 0.31, activated plasma recalcification time, c – 97.0 ± 0.463), it was found that with increasing degree of intoxication PI and APTT indicators decreased, while levels of fibrinogen A and B raised, as well as the rate of activated plasma recalcification (a significant difference between the data of groups I and II with p < 0.01; I and II with p < 0.001; I and III with p < 0.05; I and III with p < 0.0001 was defined). **Conclusion:** (1) In assessment, the severity of pneumonia on the PSI scales and leukocyte intoxication index, we found a direct strong veracious correlation by Pearson's method (r = 0.56; p < 0.05) between the level of leukocyte intoxication index and the level of PSI. (2) Characteristic features of changes in the leukocyte index of intoxication in patients with community-acquired pneumonia are the following: with increasing degree of intoxication, the value of leukocyte index of intoxication increases significantly (p < 0.05). (3) When assessing changes in the coagulogram depending on LII and PSI scale, it was found that with increasing degree of intoxication PI and APTT indicators decreased but the levels of fibrinogen A and B increased, as well as the rate of the activated plasma recalcification.

59. Immunosuppressant Therapy in Paraquat Poisioning with Multisystem Involvement: A Case Series (Conference Abstract ID: ABS0059)

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**Background:** Paraquat (1,1′-dimethyl-4,4′-dipyridilium), also known as Methyl Viologen, is an organic chemical compound. After absorption, this compound undergoes redox cycling which leads to the generation of reactive oxygen species and nitrite radicals. Redox cycling consumes N ADPH, one of the cell's key antioxidant defenses. The resultant oxidative stress causes cell damage via lipid peroxidation, mitochondrial dysfunction, necrosis, and apoptosis. Ingestion of large amounts (>50–100 mL of 20% w/v) results in fulminant organ failure, while ingestion of smaller quantities leads to toxicity in two key target organs: kidney and liver. **Aim and objective:** To document the clinical features, complications, and effects of immunosuppressant therapy in patients of paraquat compound consumption. **Materials and methods:** Eight patients of paraquat consumption were studied over a period of 6 months in a tertiary care centre in central India. All patients were administered gastric lavage with activated charcoal. Immunosuppression in the form of pulse therapy of intravenous methylprednisolone and cyclophosphamide, along with antioxidants like vitamin E, vitamin C, and N-acetyl cysteine were administered to all patients. Along with appropriate supportive therapy, hemodialysis was also done if the need arose. **Results:** All of the eight patients developed multisystem dysfunction in the form of oral ulcerations, renal and pulmonary involvement. Three of the total eight patients had additional hepatic derangement as well. Two patients with severe complications survived. Both these patients received timely intervention within 10 hours of consumption. **Conclusion:** Early constitution of treatment in moderate to severe paraquat poisoning with immunosuppressants, antioxidants, and hemodialysis proved to be beneficial. Timely intervention however is key, and further research needs to be undertaken to strengthen the basis of definitive management in patients of paraquat poisoning.

60. A Survey on Thromboprophylaxis Practices among Critical Care Experts in Neurocritical Care Patients (Conference Abstract ID: ABS0060)

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**Background:** Thromboprophylaxis practice patterns are quite diverse in neurocritical care patients. The risk of venous thromboembolism, nevertheless, remains high in this group due to prolonged immobilized status, extended length of stay, and multiple comorbidities. We planned a survey to comprehend the various practices related to it among critical care experts. **Aim and objective:** The survey will help us to review and improve thromboprophylactic practices in neurocritical care patients. **Materials and methods:** The prospective questionnaire-based survey was undertaken amongst the critical care experts on the practices followed in neurocritical care patients. **Results:** A total of 150 critical care experts participated in the survey. Fifty-two
percent of them responded that thromboprophylaxis is practiced less often in neurocritical care patients compared to general critical care patients. Of the respondents, 79.3% preferred using combined pharmacologic and mechanical devices. Fifty-six percent of the critical care experts believed that both forms are equally effective in preventing venous thromboembolic events (VTEs). The decision to start any form of heparin for this purpose was usually a combined decision of the intensivist and Neurophysician/Neurosurgeon. There was a preference to use chemoprophylaxis in patients with Glasgow Coma scale (GCS) below 9 among 68.2% responders. Amongst those who followed pharmacoprophylaxis 87.9% preferred using low molecular weight heparin (LMWH) against standard heparin. In haemorrhagic brain strokes, 55% experts agreed for an individualized decision to commence chemoprophylaxis. There was no statistical significance found with use of pharmacoprophylaxis with increase in hematoma size in hemorrhagic brain stroke patients. Around 38.9% participants concur to go for use of Duplex Ultrasound in patients who do not get pharmacologic agents for prophylaxis. Most of the experts reported use of chemical thromboprophylaxis in neurocritical care patients with varied diagnosis at varying intervals. The reluctance rate to use any form of heparin because of fear of bleed was as high as 87%. There was lack of clarity in the duration of prophylaxis for neurocritical care patients who remained immobilized beyond 4 weeks. A clear majority (87%) believed that pharmacologic prophylaxis can reduce incidences of VTEs and mortality. Conclusion: Thromboprophylaxis practices among neurocritical care patients remain quite heterogenous. It is believed by majority that pharmacoprophylaxis will reduce rate of VTEs and mortality. The decision to start any form of heparin for this purpose was usually a combined decision of the Intensivist and Neurophysician/Neurosurgeon. There was concern regarding increase in size of hematoma in cases of intracranial hemorrhage and traumatic brain injuries if chemoprophylaxis was to be used. There was a preference to use LMWH when it comes to use pharmacoprophylaxis in neurocritical care patients. There was uncertainty on the duration of thromboprophylaxis in certain category of neurocritical care patients. This survey will further act as a guide to comprehend an elaborate prospective study on thromboprophylaxis practices and outcomes in neurocritical care patients.

**Keywords:** Hepatic encephalopathy, Portal hypertension, Portosystemic shunt.

**Introduction**

Hepatic encephalopathy (HE) is defined as an alteration in personal autonomy/independence, consciousness, behavior, and psychomotor and cognitive function.¹ It is due to the accumulation of toxins due to hepatocellular dysfunction and/or portosystemic shunting.² HE is classified into two forms: encephalopathy related to hepatic failure (synthetic HE) and encephalopathy related to portosystemic shunts (whether man-made like transjugular intrahepatic portosystemic shunts (TIPSs) or spontaneous portosystemic shunts (SPSSs)).³,⁴ The latter is referred to as Type-B or bypass HE, and is largely uncommon but causes considerable morbidity to the patient and expense to the health care system. Usually, HE and resultant portal hypertension is a common manifestation of hepatic cirrhosis, but sometimes a large shunt may cause HE even in the absence of liver cirrhosis.⁵ Most patients with recurrent or persistent HE are recalcitrant to conservative and medical therapy. Type-B encephalopathy is usually (especially early in its course) associated with preservation of the liver function (relatively low Model for End-Stage Liver Disease [MELD]), which keeps the suffering patient from not receiving a timely liver transplant.

Chronic and recurrent hepatic encephalopathy may sometimes lead to the development of secondary parkinsonism.⁶ Parkinsonism and portosystemic encephalopathy are reversible cerebral disorders associated with motor and neuropsychological dysfunctions that may develop in patients with portosystemic shunts and reverses with treatment (occlusion) of portosystemic shunts.⁷

**Case Report**

A 47-year-old female patient was admitted with altered sensorium and inability to talk with a history of difficulty in maintaining balance while walking for 1 day. The patient was a known case of diabetes mellitus and hypertension (under treatment) and one episode of ischemic stroke 2 years back. The patient had a history of recurrent admissions in past (3 times in the last 1 year; June 2019, February 2020, November 2020) and was found to be in hepatic encephalopathy as the cause for such presentations. The patient was then diagnosed with Adult-onset extrahepatic portal vein obstruction. Relatives denied intake of alcohol or any chronic drug consumption.

On examination, she was vitally and hemodynamically stable. But neurological examination was significant to be having nystagmus, bradykinesia, and slurred speech with upper limb coarse tremors. Urgent CT Brain was done which did not show any Intracranial structural pathology. Her investigations were: Hb 8.7 g%, TLC 4100/cmm, PLT 40000, total bilirubin 0.4 mg%, SGOT 52.5 U/L, SGPT 30.1 U/L, total protein 6.6 g%, INR 1.46. To find the cause of altered sensorium and with a known history of recurrent hepatic encephalopathy, serum arterial ammonia was sent and was found to be 116 (reference range 10–85). The patient was provisionally diagnosed to be having hepatic encephalopathy and was started on IV Antibiotics, Syp lactulose, Tab rifaximin, and other old medications.

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MRI brain suggestive of symmetric T1 hyperintensity involving bilateral globus pallidus and substantia nigra with subthalamic nuclei. Finding likely representing acquired hepatocerebral degeneration secondary to portosystemic encephalopathy. USG abdomen s/o decreased portal vein calibre with multiple collateral formation s/o portal cavernoma due to EHPVO. On gastrology opinion, CECT abdomen was done, suggesting normal liver size, shape, and echotexture. Portal vein appeared narrow (7 mm in calibre) with a large lienorenal portosystemic collateral. To further detail the shunt MR abdomen was done. MR abdomen s/o a large lienorenal portosystemic collateral of approximate length 10 cm and maximum diameter 3 cm with borderline splenomegaly. Repeat gastrology expert opinion was taken and owing to repeated episodes of hepatic encephalopathy through her portosystemic shunting, the decision was made to undergo interventional coil embolization to close the anastomosis. The patient was subsequently transferred to the gastrology department where the shunt was closed by plug and coil embolization. The post-procedure patient was stable, with serum arterial ammonia level within normal range, and got discharged with advice to follow up on an OPD basis.

Discussion: Hepatic encephalopathy is suspected in non-cirrhotic cases of encephalopathy because the symptoms are accompanied by hyperammonaemia. When psychoneurological symptoms are suggestive of hepatic encephalopathy but objective and subjective symptoms or abnormal values of liver function tests are not sufficiently indicative of liver cirrhosis, portal-systemic encephalopathy should be suspected. An abnormal connection between the portal and systemic circulation is known as a portosystemic shunt. These can be classified into extrahepatic or intrahepatic. Portosystemic shunts are usually believed to be due to portal hypertension. Along with a comprehensive biochemical workup, various imaging modalities can assist in the detection and characterization of the anatomical anomaly, including ultrasound and cross-sectional imaging such computed tomography. Unmetabolized ammonia, a known culprit of hepatic encephalopathy, is highly dependent on portal flow and is elevated in the setting of a shunt. In most cases, liver cirrhosis causing portal hypertension eventually leading to the formation of SPSS is the usual natural history. Our case is rare in that at the time of presentation, the patient neither had cirrhosis of the liver nor was having signs of portal hypertension. It has been hypothesised that the patient had portal hypertension at one point in time which lead to portosystemic shunt formation, but later on, the extent of portal hypertension has been released because of the development of portal cavernoma formation and the shunt itself.

Our patient also developed neurological features of extrapyramidal involvement. Literature reports that PSE patients may present symptoms of parkinsonism and show characteristic brain MR imaging findings, despite the cause of the shunt. There was no history of alcoholism. Some features allow Parkinson’s disease as well as Parkinson-plus syndromes to be reasonably ruled out in this patient, such as absence of resting tremor and the relative symmetry of symptoms. Wilson disease was also ruled out. Similar parkinsonian symptoms have been described in the setting of hepatic failure and in spontaneous, surgical, or even congenital portosystemic shunt. As per literature, reasonable evidence points toward increased endogenous manganese deposition into the basal ganglia as a major cause of MR imaging hyperintensities observed in patients with portosystemic shunt.

Different studies demonstrated that shunt-related hepatic encephalopathy due to the increased shunt blood flow can be dramatically improved by closing the shunts. Most studied interventions are in cirrhotic patients and associated with improved survival, liver function, and prevention of hepatic encephalopathy. This case demonstrates successful angiographic embolization of a spontaneous extrahepatic portosystemic shunt, with confirmatory reduction in serum ammonia.

Conclusion
Hepatic encephalopathy associated with portosystemic shunting is known as type B encephalopathy, and occlusion of the shunt by endovascular management is the preferred treatment of choice. The identification of SPSS became crucial in patients with HE, in which the embolization of large SPSS may be associated with improved survival and liver function, as well as preventing the recurrence of HE and progression of the parkinsonian symptoms.

Abbreviations
HE, hepatic encephalopathy; PSS, portosystemic shunt; GP, globus pallidus; SN, substantia nigra; EHPVO, extrahepatic portal vein obstruction.

Conflict of Interest
None

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62. brainstem death: a rare complication of fat embolism syndrome (conference abstract id: abs50062)
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fat embolism is common following long bone fractures in polytrauma cases. although uncommon, fat embolism syndrome is seen in 3–4%, after 12–72 hours of presentation. fat embolism syndrome remains a diagnosis of exclusion, although gurd and wilson’s criteria are the diagnostic criteria widely used today but they are non-specific and have never been validated in large cohorts. manifestations are multisystem dysfunction (primarily involving the lungs, brain, and skin), and by other non-specific symptoms, such as fever, haematuria, thrombocytopenia, anemia, disseminated intravascular coagulation, right ventricular dysfunction, shock, and death. although it is usually self-limiting, it may be fatal (mortality rate of up to 10%). the lungs and brain are the most often involved sites and neurological signs and symptoms can be seen in 33–86% of patients either simultaneously or after pulmonary manifestations. the main signs and symptoms in patients with neurological involvement have been reported in the literature range from headache, confusion, aggressive behavior, seizures, cortical blindness, dementia, apathy, focal deficit (such as hemiplegia, aphasia, agnosia), and altered sensorium with hallucinations (auditory or sexual hallucinations) up to coma onset. other neurological signs and symptoms rarely reported in the literature are dystonia; decorticate posturing, and severe cerebral edema associated with refractory intracranial hypertension and hydrocephalus. there is very sparse literature on brainstem death following fat embolism syndrome, we report here a case of massive cerebral fat embolism leading to brain death. a 32-year-old gentleman was shifted from a local hospital for further care at our tertiary care hospital with an alleged history of injury to the lower limb secondary to a fall of heavy machinery on it resulting in multiple lower limb fractures. on the same day of presentation, the patient had a gttcs following which he was intubated for airway protection and shifted to our hospital. on arrival, the patient was on a mechanical ventilator requiring vasopressors support for haemodynamic stability. he had cold extremities and a petechial rash on the upper trunk. the patient was anaemic and thrombocytopenic. a 2d echo study done was normal. the patient had fixed dilated pupils not reactive to light, he was resuscitated and a ctpa done reported to show partial lumen occluding thrombus in sub-segmental branches. ct brain was suggestive of diffuse cerebral oedema and effacement of ventricles. eeg was suggestive of electro-cerebral silence. there were absent brain stem reflexes and he did not trigger spontaneous breaths on a ventilator, and his first apnoea test was positive, relatives were counselled and they consented for organ donation. organs were retrieved as per ztcc protocol after a second positive apnoea test.
63. perioperative management of anterior neck soft tissue using ultrasonography to determine predictors of difficult laryngoscopy (conference abstract id: abs50063)
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relevance: a significant problem of current anesthesiology for planned surgical interventions is the reliable prediction of difficult tracheal intubation during preoperative clinical examination, and determining the need for additional research methods. all this is done to optimally ventilate and oxygenate the patient during total intravenous anesthesia for routine surgery and, thus, the most protective management of the patient with minimizing risks. there are many prognostic bed tests that have weak and moderate
64. Clinical Profile and Risk Factors for Severe Scrub Typhus in Children Requiring Pediatric Intensive Care Unit (PICU) Admission (Conference Abstract ID: ABS0064)

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Aim and background: Scrub typhus infection is an important cause of significant morbidity and mortality in children in endemic areas. Objectives: The objectives of the study were to describe the clinical and laboratory characteristics of children with scrub typhus infection requiring PICU admission and to determine the risk factors for the severe infection. Materials and methods: This was a retrospective chart review from July 2016 to December 2018 of children aged 1 month to 18 years with scrub typhus infection (diagnosed as positive IgM serology by ELISA) admitted in the Pediatric Intensive Care Unit (PICU) at a tertiary care centre. Data collection included demographic details, clinical features, laboratory investigations, treatment details, and outcomes. The severity of infection was defined as the presence of multiorgan dysfunction syndrome (MODS). The data were analysed using STATA 13 version. Descriptive statistics were used to describe the clinical profile and outcomes while risk factors for severe infection were determined by univariate and multivariate analysis. Results: During the study period, out of 1214 PICU admissions, 34 patients (2.8%) were diagnosed with scrub typhus. The mean (SD) age was 11.7 (4.4) years with the majority being females (71%). The mean duration of illness was 7.0 (3.3) days. Fever was present in all the cases. The most common indications for PICU admission were: respiratory distress-19 (65.5%), shock-17 (51.5%), altered sensorium-5 (14.2%) and active bleeding-3 (8.3%). Doxycycline was received in 93.4% while azithromycin in 44.4% of children. MODS was present in 15 (44.1%) patients. The mortality rate was 5.6%. Gastrointestinal symptoms, respiratory distress, altered sensorium, presence of jaundice, low systolic blood pressure, thrombocytopenia, hyperbilirubinemia, raised liver enzymes, increased blood urea and creatinine, low serum sodium and delayed duration of defervescence were associated with increased risk of MODS in univariate analysis. On multivariate analysis, raised alanine transaminase (OR-1.04, p<0.02), total serum bilirubin (OR-2.24, p<0.05), and hyponatremia (OR-5.43, p<0.04) were found to be independent factors for predicting the development of MODS in children with scrub typhus infection. Conclusion: MODS was present in almost half of the children with scrub typhus requiring PICU admission indicating severe scrub typhus infection. Hyperbilirubinemia, raised liver enzymes and hyponatremia were the risk factors for severe scrub typhus infection in children.

65. Thinking Beyond Infective Encephalitides: Autoimmune Encephalitis a Diagnostic Challenge to the Intensivist (Conference Abstract ID: ABS0065)

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Aim and background: Non-infective encephalitides is a diagnostic challenge both to the intensivist and the neurologist. It can be easily misdiagnosed as a psychiatric disorder if not clearly evaluated. Delay in diagnosis and management adds to the morbidity. The incidence of autoimmune encephalitis is 1–5 patients per million population in high income countries. Newer methods of diagnosis and early initiation of treatment has clearly changed the outcomes of the now, not so rare disease. Case: A 30-year-old female presented to ER with complaints of fever for 3 days, generalised weakness, burning micturition, and itching in the genital region for 3 days. The initial evaluation suggested the possibility of a UTI with vulvovaginitis. The patient was admitted to wards and managed accordingly. On day 2, she developed generalized tonic-clonic seizures with altered sensorium for which she was transferred to the ICU. In view of fever, new-onset seizures, and altered sensorium meningitic workup was done. Lumbar puncture and MRI brain were normal. EEG revealed diffuse background slowing. Due to persistent orofacial dyskinesia, tics, and focal seizures, she was managed as per status epilepticus protocol and she was commenced on midazolam infusion. This prompted us to evaluate for autoimmune encephalitis and viral encephalitis. Infective workup for blood and serum came negative. Endocrine workup including thyroid profile was normal. Her
autoimmune panel revealed positive anti-recoverin antibody and was started on plasma exchange therapy (PLEX) after a course of steroids. She was further evaluated to look for any malignancy. She had a prolonged stay in the ICU due to refractory seizures. She developed significant weakness of all four limbs. Patient gradually responded to the plasma exchange and was weaned off ventilation. She received 7 cycles of PLEX. Her motor power improved and was started on second line immunosuppressant therapy with rituximab. Currently, she has finished her immunosuppression course and is on follow up with the neurologist. Discussion: Autoimmune encephalitis is a serious clinical condition that may present with features similar to acute psychosis. It is always a diagnosis of exclusion. Clinicians must rule out infective, metabolic, and neoplastic causes to diagnose a case of autoimmune encephalitis. The diagnostic approach is usually syndromic. Symptoms range from psychosis, dystonia, chorea, status epilepticus, and neuropsychiatric. This broad spectrum of symptoms makes it a diagnostic challenge. Autoantibody assays are currently available to detect antibodies in CSF and serum. Not all autoantibodies can be detected by an assay. Currently, over 20 different autoantibodies can be detected. Association of autoantibodies to primary etiology like malignancy must be made by a detailed workup. Relapse is common, hence long-term immunosuppression and patient education are of paramount importance. Conclusion: Autoimmune encephalitis is a relatively common form of encephalitis which is treatable. Not all autoimmune encephalitis are seropositive or have a marker or diagnostic tool. A symptomatic approach with careful clinical evaluation is the cornerstone of the diagnosis. This disorder has a high rate of recurrence so prolonged treatment and good patient interaction are necessary for better outcomes.

66. Multisystemic Complications Associated with COVID-19 in a South Indian Intensive Care Unit: A Retrospective Observational Study (Conference Abstract ID: ABS0066)
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Aim and background: Coronavirus disease (COVID-19) is a systemic disease with multi organ involvement and its systemic complications have varied effects ranging from mild to life threatening events affecting survival and increasing the overall morbidity and mortality. Objectives: To determine the incidence, association, and risk factors complicating coronavirus disease (COVID-19). Materials and methods: The study was conducted on 350 patients who were admitted to Meenakshi mission hospital and research centre, Madurai (TN) between 1 April 2021 and 15 September 2021. Adult patients aged 18 years and above with confirmed SARS-CoV-2 infection were included in the study. The primary outcome of this study was the incidence of complications, defined as organ-specific diagnoses occurring alone or in addition to any hallmarks of COVID-19 illness. We used multilevel logistic regression and survival models to explore associations between these outcomes and in-hospital complications, age, and pre-existing comorbidities. Results: Among the 350 recruited patients, 304 patients were analyzed. Of the patients admitted to the hospital almost 40.1% had at least one complication. The mean age of the study population was 60 (±5) years with males being 68.5% and females being 32.5% of the study population. The incidence of complications were complex respiratory complications 52.2%, cardiovascular complications 21.6%, renal complications 11.2%, neurological complications 9%, and gastrointestinal complications 6%. Conclusion: Male sex, respiratory distress, comorbidities, lethargy, immunosuppression, and long disease duration are critical risk factors for the development of complications associated with COVID-19.

67. Comparison of Norepinephrine and Terlipressin vs Norepinephrine Alone for Management of Septic Shock: A Randomised Control Study (Conference Abstract ID: ABS0067)
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Aim and background: Terlipressin, a long-acting synthetic analogue of vasopressin, exerts higher selectivity for the V1 receptor and produces potent vasoconstriction of blood vessels without causing damaging side effects of vasopressin. Therefore, there lies potential in starting a low dose continuous infusion of terlipressin early in the management of septic shock in addition to norepinephrine to attain better organ perfusion and mean arterial pressure without having to significantly increase the dose of either of them thus avoiding their side effects. Objective: 1. To estimate the dose of noradrenaline in µg/kg/min after 12 hours of starting the vasopressor infusion to keep mean arterial pressure (MAP) above 65 mm Hg. 2. To measure the change in serum lactate concentration, urine output, and SOFA score after 12 hours of starting the vasopressor infusion. Materials and methods: In this prospective, randomized control trial, 50 adult patients with septic shock were divided into two groups. Group I received a combination of injection terlipressin 0.02 µg/kg/min (fixed dose) infusion and injection noradrenaline 0.01–3.0 µg/kg/min infusion. Group II received injection noradrenaline 0.01–3.0 µg/kg/min infusion alone. Noradrenaline in both groups was targeted to achieve a MAP of 65–70 mm Hg. The data collected were the dose of noradrenaline required to maintain a MAP of above 65 mm Hg, urine output, serum lactate, procalcitonin level, C-reactive protein, SOFA score, total duration of vasopressor support, and incidences of the adverse effects. Results: The noradrenaline dose in group I vs group II at 12 hours was found to be 0.141 ± 0.067 vs 0.374 ± 0.096 µg/kg/min (p ≤ 0.005). The blood lactate concentration was significantly lower and urine output higher in group I than group II (p ≤ 0.05). Group I had a significantly greater reduction in SOFA score in 12 hours than group II. Group I had a significant decrease in the duration of vasopressor administration than group II in patients being discharged from the ICU. However, there was no difference in the mortality between the two groups during their ICU stay. Conclusion: A low dose continuous infusion of terlipressin along with norepinephrine could help attain early resuscitation goals for managing patients with septic shock.

68. A Clinical Audit of Code Blue and MET Call in a Tertiary Care Hospital of 2 Years (Conference Abstract ID: ABS0068)
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Introduction: Loss of muscle mass is a known entity in critically ill patients. Patients develop sarcopenia and muscle wastage due to multiple factors leading to intensive care unit acquired weakness (ICUAW) portending increased days on ventilator and ICU stay. It also leads to prolonged post ICU debility making a return to pre-illness work and social activities very challenging. The traditional Medical Research Council tool cannot be applied in sedated patients. Muscle quantification at a single time point and for longitudinal analysis will help characterize metabolic and functional changes in lean tissue, understand the mechanisms of muscle wasting, and assess therapeutic interventions. Imaging techniques including computer tomographic scan, magnetic resonance imaging, and dual-energy X-ray absorptiometry mandate patient transport to radiology and/or exposure to radiation. Ultrasound is being used as a tool to objectively measure muscle mass and strength to predict and diagnose ICUAW. There are very few studies in this realm and we intend to explore the feasibility and applicability of this technique in our ICU patients. Aim and objectives: 1. To estimate the prevalence of muscle wasting in ICU patients. 2. To track muscle mass loss with sequential measurements. Materials and methods: We intend to conduct a prospective observational single centre study including 50 patients in our ICU from October 2021 to January 2022. After approval by the ethics committee, written and informed consent will be obtained. All adult patients admitted to the ICU with an expected LOS >4 days will be included. Patients with known neuromuscular diseases, such as myopathy, neuropathy, or stroke, amputated lower limbs, post-surgery of the lower limb, and who refuse to consent will be excluded. Once enrolled, patients will undergo an ultrasound assessment of the rectus femoris. Physical data: age, sex, height, and weight when possible will be collected for all patients. Clinical data obtained upon ICU admission will include demographic characteristics, prognostic index by simplified acute physiology score (SAPS 2), ICU length of stay, and mortality. Ultrasound protocol: We intend to use the GE Logiq e; portable ultrasound machine. We will use a validated protocol as per the SARCUS 2020 update, to measure the muscle thickness, cross-sectional area, and pennation angle for the rectus femoris muscle. The measurements will be made on the day of admission and repeated on days 3, 7, and 10. Statistical analysis: Demographics of patients' characteristics will be summarized as mean ± standard deviation (SD) for continuous variables and percentage value for categorical variables. Paired t-test will be performed to check the mean significant difference between different days of muscle wastages from baseline to 10 days of ICU.

71. Comparison of Chest Ultrasonography with Chest Radiography for Evaluation of Acute Dyspnea in the ICU (Conference Abstract ID: ABS0071)

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Aim and background: Chest radiography is the most common investigation used to evaluate a patient with dyspnea, done almost regularly in ICU. Chest ultrasonography is another modality for evaluating dyspnea with great accuracy and less ionising radiation. Objective: This study aims at analysing the similarity between chest radiography and chest ultrasonography in evaluating acute
dyspnea. **Materials and methods:** We are conducting a double-blind, prospective study (CTRI/2021/07/034517) in the intensive care unit of fortis escorts heart institute, Okhla New Delhi in which patients presenting with dyspnea from June 2021 to 31 October 2021 are evaluated with chest ultrasonography followed by chest radiograph within 1 hour. The sonographer and radiographer independently make an assessment of a patient. Inter-rater agreement between them is calculated using Cohen's kappa coefficient. **Results:** Average time for chest ultrasonography was 5 minutes whereas the average time from chest radiography request to interpretation was approximately 1 hour. The interim results showed a high level of Inter-rater agreement for pneumothorax (Cohen's kappa: 1) and pleural effusion (Cohen's kappa: 0.86). A moderate level of agreement for lung consolidation (alveolar syndrome + atelectasis) and interstitial pattern (pulmonary oedema + pulmonary fibrosis) was there, Cohen's kappa 0.52 and 0.6, respectively. Analysis of chest ultrasonography and chest radiography showed a high level of similarity in diagnosing pleuropulmonary pathology in dyspneic patients. **Conclusion:** Final conclusion will be made after the completion of the study and will be shared at the time of article submission. Keeping in mind the interim results along with less time needed for chest ultrasonography interpretation, this technique can be used for making quick diagnosis and intervention, if required. Daily radiation can also be prevented. **Keywords:** Chest radiography, Chest ultrasonography, Interstitial pattern, Lung consolidation.

72. To Study the Clinical Profile of ICU Acquired Hypernatremia in Critically Ill Adult Patients (Conference Abstract ID: ABS0072)

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**Introduction:** ICU acquired hypernatremia has become more prevalent than ICU hyponatremia and it adversely affects patient outcomes. **Aim and objectives:** To evaluate the incidence, severity, risk, and causative factors of ICU acquired hypernatremia in critically ill adult patients and its correlation with outcome. **Materials and methods:** In this prospective observational study, all patients >18 years admitted to CCM ICU of SGPGIMS Lucknow who developed hypernatremia after 24 hours of ICU admission were studied. ICU acquired hypernatremia was defined as two consecutive serum sodium values >145 mEq/L after 24 hours of ICU admission. Sodium values (peak and nadir) were noted for the first 8 days after the onset of hypernatremia. Serum, urine osmolality and serum, urine electrolytes were noted for the first 2 days after onset of hypernatremia. Hypernatremia severity was graded as: Mild (146–149), Moderate (150–169), and Severe (≥170). All patients were followed until 28 days of onset of hypernatremia or ICU discharge. Association of hypernatremia with neurological outcome and mortality was studied. Demographic profile of patients and ICU severity scores were also noted. The study was approved by the Institutional ethics committee. Descriptive statistics were applied using SPSS version 26.0. This is an ongoing study and the effect of ICU hypernatremia on the outcome would be reflected with larger numbers. **Results:** 25 patients with hypernatremia were identified between October 2020 and September 2021 out of 192 total ICU admissions, the incidence being 13%. 16 patients (64%) were males. 19 patients (70%) were medical admissions. The median age (years) was 47 (35.5–65.5, IQR 30). 8 patients (32%) were hypertensive, 8 were diabetic, and 10 (40%) had no co-morbidity. The neurological disease was the most common diagnosis (8 patients, 32%). Median admission APACHE II score was 16 (11.5–23.5) and SOFA score was 8 (6–10). The median sodium range during the first 8 days after onset of hypernatremia was 149–160, median peak sodium level was 160 (153–164), the median time to onset of hypernatremia was 4 days (2–11.5), median hypernatremia duration was 7 days (3–15.5), and median total length of ICU stay was 28 days (10–53.5). 20 patients (80%) had moderate severity of hypernatremia. 15 patients (60%) with ICU acquired hypernatremia had polyuria. 13 patients (52%) were found to have hypovolemic hypernatremia. 11 patients (44%) had uncorrected sodium during ICU stay and none survived. Out of 14 patients in whom sodium got corrected, 11 survived at 28 days. 20% (5 patients) had GCS ≥13 at 28 days after onset of hypernatremia. 28-day mortality after the onset of hypernatremia was 52% and mortality during ICU stay was 72%. **Conclusion:** ICU acquired hypernatremia and uncorrected sodium levels during ICU stay are risk factors for increased mortality and poor neurological outcome. Hypovolemic hypernatremia of moderate severity was the most common etiological type with polyuria being the most common cause of hypernatremia.

73. Immune-mediated Acute Limb Ischemia: A Rare Complication of SARS-CoV-19 Infection (Conference Abstract ID: ABS0073)

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Occurrence of acute limb ischaemia (ALI) in patients with SARS-CoV-2 is an uncommon complication. COVID-19 has been associated with thrombotic disease secondary to a hypercoagulable state. COVID-19 appears to cause a hypercoagulable state through mechanisms unique to SARS-CoV-2 and centres on the cross-talk between thrombosis and inflammation. The proposed hypothesis includes a severely heightened inflammatory response that leads to thrombotic inflammation, through a mechanism such as cytokine storm, complement activation, and endothelitis. The innate and adaptive immune responses result in immune-mediated thrombosis, leading to thrombotic complications, such as myocardial infarction, pulmonary embolism, deep vein thrombosis, and stroke. The activation of coagulation (D-dimer) and thrombocytopenia are important prognostic markers in SARS-CoV-19 infections. At our institution, we found six patients to have ALI and reviewed their characteristics and outcomes. Our findings showed that in severe COVID-19 disease, the association of ALI had high mortality. **Materials and methods:** It is a retrospective observational study performed at Bangalore Baptist hospital during the COVID-19 pandemic (August 2020 to August 2021). We report a case series of 6 ALI patients aged between 30 and 55 years. All the patients were tested positive for SARS-CoV-2 disease. All our patients received standard treatment care as per institution protocol for SARS-CoV-2 disease. They were all commenced on therapeutic anticoagulation at admission to ICU. Baseline coagulation profile and inflammatory markers and their trends were followed in all patients. The diagnosis of ALI in all ventilated patients was done clinically by the presence of pallor, pulselessness, acrocyanosis, blisters, and dry
gangrene. Results: Out of 415 patients admitted to the intensive care unit with SARS-CoV-2 disease, 6 patients had developed limb ischemia (1.4%). Male and female preponderance was equal. Among 6 patients, 1 was newly detected diabetes mellitus, 2 were diabetic and hypertensive of which one had right upper limb post-poli paralytic sequelae, and the rest had no co-morbidities. The mean duration of ICU stay and mechanical ventilation days was 22 days and 17.8 days, respectively. All the patients had lower limb ischemia of which 3 were unilateral. Discoloration extended up to the ankle joint in almost all cases. As these patients were on the ventilator secondary to severe hypoxemia or vasopressor support, they were managed conservatively. Two patients presented with stroke, pyelonephritis with acute kidney injury, and septic shock requiring high vasopressor support. 5 of 6 patients died during the course of treatment (mortality 83%). All patients showed high inflammatory markers especially D-dimer during the initial development phase of limb ischemia. 1 survived patient required bilateral foot amputation due to dry gangrene. Conclusion: Limb ischemia with tissue necrosis is a dreadful complication and is associated with high mortality. High incidence of thrombosis despite therapeutic anticoagulation raises a question about pathophysiology unique to COVID-19. Evidence of inflammatory-mediated thrombosis and endothelial injury are possible explanations which would support the use of immunotherapy in addition to anticoagulation for the treatment of thrombotic events. Further insight into the cause and management of thrombosis is needed.

74. Fibrinolytic Activity of Blood in Intensive Therapy of Patients with Hemoblastosis (Conference Abstract ID: ABS0074)
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Purpose of the work: Substantiation of plasmapheresis expediency in intensive care of patients with acute leukemia. Materials and methods: Fifteen patients with acute leukemia aged 20–60 years were examined. The distribution of patients by nosological groups was as follows: acute myeloblastic leukemia (AML) – 8 people, acute lymphoblastic leukemia (ALL) – 7 people. The criterion for inclusion in the study was the presence of coagulation disorders (nasal and gastrointestinal bleeding, subcutaneous hematomas). Patients received infusion detoxification therapy, which included crystalloids (0.9% sodium chloride solution, Ringer’s solution, Hartmann’s solution). In toxic hepatitis, a detoxification therapy included a 250 mL solution of resorblact, which is known to not significantly affect the vascular-platelet branch of the hemostasis system. Anemia was corrected with erythrocyte-containing replacement therapy to maintain hematocrit at 25–30%, and thrombocytopenia with platelet concentrate replacement to a safe platelet level. In case of disturbances in the system of fibrinolytic activity of the blood in the replacement therapy included therapeutic plasmapheresis in a volume of up to 800.0 mL with compensation of the removed plasma with fresh-frozen plasma. Blood fibrinolytic activity was investigated by determining fibrinogen parameters, fibrinogen degradation products, the concentration of monomeric soluble complexes, blood plasmin activity, and plasminogen proactivator. Results: According to the results of the study, it was found that the appointment of appropriate intensive therapy based on detoxification infusion solutions and plasmapheresis contributed to a significant reduction in a number of studied parameters, which significantly reduced the incidence of DIC syndrome or significantly reduced its manifestations. An increase in the level of fibrinogen in 2 times was accompanied by a decrease in the level of fibrinogen degradation products in the blood and the level of plasmin by 1.6 times, the level of plasminogen proactivator by 1.3 times. At the same time, there was a decrease in the concentration of soluble fibrin-monomer complexes that bind parts of fibrinogen and early fibrinolysis products, which may indicate a decrease in intravascular blood activation as a result of treatment. After intensive therapy, there was an improvement in the clinical condition of patients, which was manifested by a decrease in hemorrhagic manifestations such as nasal, gastrointestinal bleeding, there was a reduction in subcutaneous rashes. Conclusion: The use of intensive care methods in patients with hemoblastosis on the background of plasmapheresis leads to a decrease in fibrinoligical activity of the blood by reducing the level of plasm, plasminogen activator, and fibrin degradation products, which may reduce the development of thrombo-hemorrhagic manifestations.

75. Acute Kidney Injury Associated with Leptospirosis and/or COVID-19 Pneumonia (Conference Abstract ID: ABS0075)
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Aim and objectives: To compare the mortality and outcome of patients with acute kidney injury (AKI) associated with leptospirosis and/or COVID-19 pneumonia. Materials and methods: The study was conducted by the Department of Nephrology in a tertiary care setup with 97 patients with acute kidney injury over a period of 3 months from July 2020 to September 2020. All the patients were divided into 3 main categories: 1. Leptospirosis with AKI. 2. COVID-19 pneumonia with AKI and 3. Patients having both leptospirosis and COVID-19 pneumonia with AKI. AKI was defined and staging was done as per KDIGO guidelines. Need for renal replacement therapy as well mechanical ventilation was noted. Thereby, the outcome and mortality were compared among the three groups. Results: Out of 97 patients included in the study, 57 (53.6%) patients had leptospirosis with AKI (group I), 25 (25.8%) patients had COVID-19 pneumonia with AKI (group II), whereas 20 (20.6%) patients suffered from leptospirosis and COVID-19 pneumonia with AKI (group III). There was a statistically significant difference between mortality rates in patients with leptospirosis, COVID, and both infections ($\chi^2 = 6.210, p = 0.045$). The mortality rate was 25% in leptospirosis patients and 52% in patients with COVID. This difference was statistically significant ($p = 0.019$). The mortality rate among patients with both leptospirosis and COVID was 45%. 15.4% of patients of group I required renal replacement therapy (RRT) in comparison to 16% of patients of group II and 35% of patients of group III. There was no statistically significant difference noted between the 3 groups ($p$ value = 0.149). Mechanical ventilation requirement: Group I – 14/52 patients (26.9%). Group II – 7/25 (28%). Group III – 13/20 (65%). There was a significant difference in the number of patients requiring mechanical ventilation among the three groups ($\chi^2 = 9.930, p = 0.007$) with group III requiring the highest. Conclusion: AKI in patients with dual infection with leptospirosis and COVID-19
results in an increased need for mechanical ventilation without a concomitant increase in the need for RRT. Despite this, the mortality remains the highest in patients with COVID-19 and AKI as compared to those with dual infection and AKI.

76. Acute Fulminant Hepatitis in Budd–Chiari Syndrome: Case Report (Conference Abstract ID: ABS0076)
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Introduction: Budd–Chiari syndrome is a rare vascular disorder secondary to hepatic venous flow obstruction manifesting as abdominal pain, jaundice, and ascites. The presentation and management vary depending on whether the patient has classical BCS (hepatic vein occlusion only) or non-classical BCS (HVC-hepatic vein + vena caval occlusion). Acute liver failure (ALF) is a rapid decline in hepatic function characterized by jaundice, coagulopathy (INR > 1.5), and hepatic encephalopathy in patients with no evidence of prior liver disease. ALF is extremely rare in both types of Budd–Chiari and especially so in the non-classical variety. We report the case of a 26-year-old man who after a bout of binge drinking presented to the ER after 3 days with symptoms of acute gastroenteritis. He was found to have an acute (fulminant) liver failure with markedly raised liver enzymes and coagulopathy. He had asterixis with brisk reflexes and EEG evidence of hepatic encephalopathy. Initially, he was treated with toxic hepatitis with N-acetylcysteine and supportive care. Imaging revealed occlusion of the hepatic veins and IVC. During the course of his illness, he required mechanical ventilation, anti-cerebral oedema measures, anticoagulation, and management of hypoglycaemia. The cause for the Budd–Chiari syndrome could not be identified. The tests for hypercoagulopathy, including JAK2 mutation, were negative. Conclusion: We are reporting this case because fulminant hepatic failure is an extremely rare presentation of Budd–Chiari syndrome. We would also like to highlight the importance of differentiating between classical BC and HVC Budd–Chiari syndrome. The latter is more common in the Asian population and is usually not associated with JAK2 mutation (or with acute liver failure). Doppler ultrasonography of the liver is essential to the diagnosis. Survival from ALF with BCS is almost unknown.

77. Humanizing ICU in COVID Age. A Comparative Study (Conference Abstract ID: ABS0077)
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Introduction: ICU admissions cause a great deal of stress. Humanizing ICU is a way to reduce the stress among the surrogates. The days are gone where the medical outcome of the patient alone was taken into consideration. Now families are recognized as a component in the outcome indicators of ICU satisfaction. KIMS hospital piloted the concept of humanized ICU in one of its multidisciplinary ICUs. Aim and objective: To evaluate the effect of humanisation and to implement if found beneficial is the way forward. To assess surrogate satisfaction in ICU, so as to identify areas of improvement for improving the quality of care. To evaluate compassion satisfaction among the nursing care providers. Materials and methods: Two multidisciplinary ICUs, at KIMS hospital Thrivunnanathapuram, were selected. One with conventional ICU care and other humanized ICU care. The surrogate of the patients was given the surrogate satisfaction score checklist. The humanized ICU was equipped with aprons with named badges and photos, one-to-one nursing care, teleservices providing 24 hours communication facilities with their patients. A comparative analysis of the surrogate satisfaction and compassion satisfaction among nursing care providers was done between two ICUs. An independent t-test was done between 2 samples to analyze the results. A total of 50 patients were admitted to MDICU 2 where the concept of humanization was not implemented. In MDICU 3 during the same period, a total of 42 patients were admitted. The nearest kin of all these patients was given the surrogate satisfaction score checklist. The data were collected from all for a period of 1 month. Results: The surrogate satisfaction among the 2 ICUs showed a marked difference. The results were statistically significant to conclude that humanizing ICU brings a positive correlation in increasing surrogate satisfaction. Compassion satisfaction showed a great difference, it was 80% more in humanized ICU. Conclusion: ICU care can be offered in a more humanized way which improves surrogate satisfaction, which is an important factor in increasing patient satisfaction also.

78. Clinical Profile of Patients with Colistin-resistant Bacterial Isolates: Experience of a Tertiary Care Centre (Conference Abstract ID: ABS0078)
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Aim and objective: Antimicrobial resistance has become a major health issue with an increasing number of organisms isolated showing resistance to currently available antimicrobials. With a rise in resistance to carbapenems, usage of colistin has increased over years for drug-resistant Gram-negative bacteria. There are limited data on colistin resistance from South-East Asian countries including India, especially in ICU settings. We aim to study the clinical spectrum and outcome of adult ICU patients with colistin-resistant positive cultures. Materials and methods: It is an ongoing study being conducted in the Department of Critical Care Medicine, SGPGIMS, Lucknow in collaboration with the Department of Microbiology. In this observational case-control study, all adult ICU patients (age >18 years) with colistin-resistant cultures have been included as cases and patients with colistin sensitive cultures have been taken as controls. Isolates with intrinsic resistance to colistin have been excluded from the study. Demographic, clinical, and laboratory parameters, ICU variables like length of ICU stay, the severity of illness, days of shock, days of mechanical ventilation, the need of renal replacement therapy, use of invasive lines, microbiological data, an outcome at 28 days, and at ICU discharge have been collected. MIC of colistin and identification of resistance is based on CLSI guidelines. Fisher’s exact test, Mann–Whitney U-test, and binary logistic regression were used for statistical analysis. Results: In the preliminary result of the study, 28 patients (8 cases and 20 controls) have been analyzed. The median age of the patients is 51.5 years with 71.4% males. The most common diagnosis on admission is GI sepsis (64.2%). There is no statistically significant difference in
the distribution of age, sex, diagnosis, and co-morbidity as well as the ICU disease severity scores like median SOFA at admission and at the day of positive culture and APACHE II score between cases and controls. Length of ICU stay, procalcitonin value at admission and on the day of positive culture, days of mechanical ventilation, days of shock, days of invasive lines, and duration of carbapenem and colistin exposure during ICU stay are statistically significant in cases as compared to controls (p < 0.05). The most common organism identified was *Klebsiella pneumoniae* in cases as well as controls (100% vs 60%). The most common site of isolation of positive culture is blood (60.7%) followed by pus/body fluid (32.1%). There is a higher trend of mortality in the cases as compared to controls (87.5% vs 75%, p > 0.05). Binary logistic regression analysis showed that cases have higher chances of mortality as compared to controls (OR: 2.33, 95% CI: 0.23, 23.91). **Conclusion:** Length of ICU stay, procalcitonin value at admission and on the day of positive culture, days of mechanical ventilation, shock, invasive lines and duration of carbapenem use, and colistin exposure during ICU stay are significantly associated with colistin resistance. There is a higher risk of mortality in patients with colistin resistance.

**80. VAP Bundle Components and Their Compliance in a Tertiary Intensive Care Unit** (Conference Abstract ID: ABS0080)

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**Introduction:** Ventilator-associated pneumonia (VAP) is one of the leading causes of mortality among patients admitted to an intensive care unit (ICU). VAP prolongs the duration of mechanical ventilation and length of hospital and ICU stay, thereby increasing the cost of care. VAP bundle is routinely deployed in ICUs to minimise VAP rates and improve quality of care and outcomes. However, the compliance of individual components of the VAP bundle is often likely suboptimal, variable, and largely unknown. Understanding this would enable targeted interventions to improve VAP bundle Practices. **Aim and objective:** To perform an audit to assess the compliance rates of various components of the VAP bundle in a tertiary medical-surgical ICU. **Materials and methods:** The audit was performed in a 24-bedded tertiary ICU by a respiratory therapist (RT) in collaboration with the infection control team. The VAP bundle audit had six evidence-based components. 1. Oral hygiene. 2. Hand hygiene. 3. Head end of bed elevation of 30–45 degrees. 4. Endo-tracheal cuff pressure monitoring. 5. Sub-glottic suction drainage. 6. Daily sedation interruption. The compliance was audited once a day at random times by an RT and an infection control nurse either during morning or afternoon shifts. After ensuring the eligibility for implementation of any VAP bundle component, the compliance was assessed. The compliance was recorded for each component and the average compliance rate for each patient was calculated. **Results:** A total of 97 patients were audited for VAP bundle compliance during the study period (564 ventilator days). The eligibility for all the components of the VAP bundle was >90%, except for subglottic suction (80.4% eligibility) and daily sedation interruption (59.1% eligibility). The bundle compliance rate of each component are: Oral hygiene – 81.1%; Hand hygiene – 87.1%; Endo-tracheal cuff pressure – 95.5%; Head end of bed elevation – 96.7%; Sub-glottic suction drainage – 84.1%; Daily sedation interruption – 93.6%. The VAP rate during the study period was 10.6 per 1000 ventilator days. **Conclusion:** Overall compliance rates of the individual components of the VAP bundle were high. Among the various components, oral hygiene and sub-glottic suctioning had lower compliance rates. A large proportion of patients were ineligible for daily sedation interruption due to medical acuity. Focused interventions addressing components with low compliance rates may improve the overall implementation of the VAP bundle, VAP rates, and outcomes.

**81. Refractory Methemoglobinemia with Lactic Acidosis: Whole Blood Exchange Transfusion as a Therapeutic Modality** (Conference Abstract ID: ABS0081)

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**Introduction:** Inorganic nitrates such as sodium nitrite are commonly used in the manufacture of diazo dyes and anti-corrosives. When ingested in large quantities, it causes methemoglobinemia and associated complications like cyanosis, confusion, and encephalopathy. We describe one such case, where the patient presented with lactic acidosis and hypotension, secondary to methemoglobinemia caused by sodium nitrite poisoning. **Case discussion:** A 42-year-old male was brought to the Emergency Department with complaints of altered sensorium since early that day. On examination, the patient was cyanosed, hypotensive, and SpO₂ 80% despite maximum oxygen supplementation (no chest signs). In view of suspicion of septic shock, a full sepsis workup was initiated. He was started on invasive mechanical ventilation and hypotension was managed with IV noradrenaline infusion. The arterial blood sample was dark brown in colour, leading to a suspicion of methemoglobinemia. His family revealed that he had ingested an unknown quantity of diazo dye. ABG revealed a high saturation gap and lactic acidosis. There was no improvement in hypoxemia when treated with 3 repeated doses of IV methylene blue 2 mg/kg over 5 min and IV ascorbic acid 10 g thrice daily. The patient was taken up for a whole blood exchange transfusion on day 2 of the ICU stay. 1000 mL of patient’s blood was manually removed over a period of 24 hours (4 sessions) through a central venous catheter, and replaced with 750 mL packed RBCs and 250 mL FFP. Following the initial exchange, the patient’s SpO₂ improved to 85%. This was repeated the next day, after which the SpO₂ further improved to 89%. The patient’s sensorium improved, cyanosis reduced and he was extubated on day 4 and kept on 4 L of O₂. He achieved hemodynamic stability the same day and was slowly weaned off noradrenaline. Over the next 10 days, the patient’s SpO₂ gradually improved to 94% and was discharged home. **Conclusion:** Whole blood exchange transfusion may be considered a therapeutic modality in cases of symptomatic methemoglobinemia, refractory to pharmacological therapies such as methylene blue and ascorbic acid. Despite the use of exchange transfusion in drug overdose, its role in methemoglobinemia is yet to be elucidated.
82. COVID-19 and Non-mucor Invasive Fungal Infections and Colonisation in Critically Ill Patients (Conference Abstract ID: ABS0082)
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Aim and objective: To study the epidemiology of non-mucor invasive fungal infections in critically ill patients during the second wave of COVID-19. Materials and methods: In our study, we included confirmed COVID-19 patients (whose COVID RT PCR was positive) who were critically ill and admitted to ICU from 1st April 2021 to 31st August 2021. We studied their blood, urine, endotracheal, BAL, nasal swab cultures for the presence of non-mucor fungal species. Results: A total of 109 patients were found to have non-mucor invasive fungal infections or colonization. Among these patients, Candida species were most common followed by Aspergillus species and then Fusarium, Penicillium, Cladosporium, Trichosporon species. Among Candida species, C. tropicalis was most common and found in 29 patients followed by C. albicans in 25 patients, C. parapsilosis in 13, C. auris in 4 while 2 each of C. krusei, C. ciferrii, C. rugosa, and C. keyfi. Among Aspergillus species, A. flavus was most common and found in 13 followed by A. fumigatus in 9, A. niger in 2 patients. Fusarium were found in 3 patients, Cladosporium in 2 patients while 1 each of Penicillium, Trichosporon species were found. Conclusion: In our study, we found that among critically ill COVID-19 patients, the incidence of invasive fungal infections and colonization was significant. Candida, Aspergillus, Fusarium, Penicillium, Cladosporium, and Trichosporon species are found. Hence, identification of these non-mucor fungal infections in critically ill COVID-19 patients is important for better subsequent management.

83. Deceased Donor Transplantation During Covid Times: Success Story From State in India (Conference Abstract ID: ABS0083)
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DOI: 10.5005/jp-journals-10071-23712A.83
In India, live donor transplantation is more common than deceased donor transplantations. The enactment of The Transplantation of Human Organ and tissue Act in India in the year 1994 legalized organ donation after brainstem death. In-hospital donor coordinators have been defined as one of the leading practices for deceased organ donation worldwide. The Transplant Procurement Manager is a healthcare specialist dedicated to deceased donation. Aim and objectives: The role of TPM in organ donation. To improve the deceased organ donation process. Materials and methods: KIMS Hospital, Kerala initiated an educational and international cooperation approach based on the implementation of a specialized program for healthcare professionals in 2019. It includes on-site training, international internship, hospital visits, and international experts visiting KIMS hospital to ensure best practices. KIMS appointed an in-hospital transplant procurement manager (TPM) to coordinate potential donors at intensive care units. The TPM became actively involved in the deceased organ donation (DDP) process. The cornerstone of the success was early and proactive identification of potential donors. Results: After 3 years of collaboration and following the initiation of TPM at KIMS, deceased organ donation activity increase markedly in the hospital. When compared 2020 vs 2019, a 60% increase was observed from 30 to 50 organs transplanted in the same period of time even against COVID pandemic effects worldwide. The conversion rate increased from 0% in 2018 to 21.4% in 2019. Conclusion: The hospital-based organ procurement units headed by transplant procurement managers (TPM), the role of hospitals, and the collaboration between a local and international organization in improving the deceased donor transplantation played a key role in good outcomes of donation and transplant programs. When the COVID-19 pandemic resulted in the suspension of the transplant programs across the country, the deceased donation and transplantation activity in Kerala were going unabated.

84. Mechanical Power in H Type COVID-19 Pneumonia: A Prospective Observational Study (Conference Abstract ID: ABS0084)
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**85. Chaos Among Pandemic: Variants of Guillain–Barré Syndrome**  
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DOI: 10.5005/jp-journals-10071-23712A.85

**Background:** Guillain–Barré syndrome (GBS) is an immune-mediated demyelinating disorder that attacks the peripheral nervous system. Antecedent infection or vaccine administration are known to precipitate the onset of this disorder. Its typical presentation leads to a symmetric, rapidly progressive, ascending paresis with associated sensory deficits and impaired reflexes. Two cases presented with features of Guillain–Barré syndrome within 72 hours of COVID vaccination and on examination revealed similar findings of GBS. Investigations were done which showed albuminocytologic dissociation and nerve conduction study showing GBS features. Total SARS COVID antibodies and IgG levels were found to be elevated in both cases, suggesting that these individuals have been previously exposed to COVID-19 and on top of that they had vaccination. These patients responded very well to IVIG treatment with an improvement of symptoms and without any adverse side effects from therapy.  

**Conclusion:** From the available evidence, there is little support to conclude a causal association between the COVID-19 vaccination or prior infection and the development of GBS. However, there remains the potential of vaccines to possibly trigger GBS and other autoimmune diseases to be considered.

**86. Can Ultrasonogram of Rectus Femoris Predict Length of Stay in ICU: A Prospective Study**  
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**Aim and background:** Muscle wasting is one of many common problems faced in the intensive care unit (ICU). Progressive loss of muscle mass is said to be responsible for weaning difficulty, prolonged stay in ICU, and increased 1 year mortality. The current study aims to find the correlation between loss of Rectus femoris muscle mass and its ability to predict LOS in ICU, ventilator days, and mortality using bedside ultrasonogram.  

**Objectives:**  
**Primary objective:** To evaluate the relation between the trend of Rectus Femoris parameters – cross-sectional area (CSA), muscle thickness (MT), pennation angle (PA), and echo intensity (EI) with the length of stay (LOS) in ICU.  
**Secondary objectives:** 1. To evaluate the relation between the trend of Rectus Femoris parameters with Mortality and Ventilator days. 2. To evaluate the relation between the admission Rectus Femoris parameters with Mortality, Ventilator days, and LOS.  

**Materials and methods:** A prospective observational study was conducted from May 2020 to August 2021 in the ICU of a tertiary care hospital. 94 patients who met the inclusion criteria were enrolled in the study. All patients were screened within 24 hours of admission for rectus femoris muscle architecture using 7–13 MHz linear transducer probe. Using ImageJ software, images were analysed and muscle parameters – echointensity, muscle thickness, cross-sectional area, and pennation angle were obtained. Repeated measures were taken on days 4, 7, and weekly thereafter till discharge from ICU. Data were analysed with STATA14.2 software. Multivariate regression analysis was used to analyse the data.  

**Results:** Of 94 patients, the average age was 53.6 years. 67% were males. 76% were intubated and mechanically ventilated. 51% received vasopressor support, 61% received steroids during their stay. There was a statistically significant positive correlation between age and admission echointensity ($p = 0.00$), a negative correlation with penannation angle ($p = 0.00$). The day 1 mean (SD) of EI was 47.503 (11.71), MT – 1.848 (0.55), CSA – 4.081 (0.99), and PA – 7.33 (2.13). The average LOS was 8 days, and the median ventilator days were 5 days. Mortality was 34.04%. The change in EI, MT, CSA, and PA was higher in patients who died. LOS, ventilator days correlated with the difference in CSA between (days 1 and 4), (days 1 and 7), while mortality correlated with the difference in MT between (days 1 and 4), (days 1 and 7) and they were statistically significant ($p < 0.05$). Admission EI had statistically significant negative correlation with ventilator days ($0.26, p = 0.013$) and LOS ($0.30, p = 0.007$). Admission penannation angle had statistically significant negative correlation with mortality ($0.45, p = 0.038$).  

**Conclusion:** In this prospective study of critically ill patients, it was found that the trend of rectus femoris...
parameters significantly predicts length of stay in ICU, mortality, and ventilator days. Ultrasonography is a simple, reliable, repeatable, and reproducible bedside tool, which allows visualization and classification of muscle characteristics namely, cross-sectional area, muscle layer thickness, echointensity, and pennation angle. Of these parameters, CSA carried a greater significance. These can be made as a part of a daily assessment of the patient, decision-making and to predict morbidity and mortality as an adjunct to the pre-existing prognostic scores. Muscle ultrasound can reliably detect pathological changes when performed repeatedly. Muscle ultrasound might help to identify those patients at the highest risk of prolonged complications, which result from excess muscle catabolism.

87. A Case Report of Delayed Neurological Manifestation in Case of Organophosphate Poisoning (Conference Abstract ID: ABS0087)

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Introduction: Organophosphate poisoning is a leading cause of suicides, terminating in hospitalisation. Organophosphorus compounds cause three main toxic effects. First by cholinergic effect, intermediate syndrome manifesting 24–96 hours after exposure characterised by acute ventilatory insufficiency due to paralysis of respiratory muscles and the third effect is OPIDN with consequent ataxia and paralysis that appears about 2–3 weeks after exposure. Case report: The present case is a 23-year-old male who got admitted in view of organophosphate compound poisoning, discharged 12 days after stabilisation. Presented after 2 weeks with gradually progressive limb weakness and stand unassisted. Muscle power in the lower limb was grade 2/5. No facial weakness was observed, the deep tendon reflexes of the lower limb were absent. Babinski reflex was bilaterally absent. Mild sensory impairment in both lower limbs. NCV report suggested severe axonal motor neuropathy affecting both upper limb and lower limb with minimal sensory involvement. The molecular target of OPIDN is inhibition of neuropathy target esterase (NTE) which leads to the metabolism of important membrane phospholipids, potentially leading to axonopathy. OPIDN term consists of distal, sensory-motor, central-peripheral axonopathy. Conclusion: To look for delayed neurological manifestation in organophosphate poisoning.

88. Coagulation Profile (Rotem Assay) in Critically Ill Patients with Scrub Typhus: A Prospective Observational Study (Conference Abstract ID: ABS0088)

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Aim and objective: To assess the coagulation profile using rotation thromboelastometry (ROTEM) in critically ill patients diagnosed with scrub typhus. Materials and methods: This is a prospective observational study conducted in a 20-bedded tertiary care ICU in Eastern India. All patients who were admitted to ICU and tested positive for scrub typhus from January 2020 onwards were included in the study. Patients < 18 years of age, on long-term anticoagulation therapy, hematological diseases, inherited coagulation abnormalities, and pregnant patients were excluded. The study was started after IEC approval and informed consent was obtained from the patient or next of kin. Scrub typhus was diagnosed using SCRUB TYPHUS (ELISA) IGM test in which an optical density value (OD) of >0.5 was diagnostic of scrub typhus. On the day of laboratory diagnosis of scrub typhus based on IGM ELISA, the blood sample was sent for rotation thromboelastometry (ROTEM) analysis. ROTEM parameters like clotting time (CT), clot formation time (CFT), alpha angle, amplitude 10 minutes after CT (A10), maximum clot firmness (MCF), lysis index 30 minutes after CT (CLI 30), and maximum lysis (ML) were analyzed using EXTEM assay. Recorded data were analyzed using appropriate statistical methods. Bivariate analysis was done using various statistically significant tests (t-test, Mann–Whitney U-test, Fischer's exact test) accordingly with the use of SPSS version 25. P < 0.05 was considered statistically significant. Results: Data of 32 patients were analyzed. The median age was 54 years and 62.5% were males. The median APACHE II and SOFA scores were 22 and 7.5, respectively. 46.9% of patients were admitted with sepsis while 18.8% with septic shock. 28.1% of patients had thrombotic complications during admission. 18.75% of patients had a stroke out of which 83.3% had a non-territorial ischemic stroke while 16.6% had an ischemic stroke with hemorrhagic transformation. 22.2% had deep venous thrombosis while 11.1% had an acute coronary syndrome. The median length of ICU stay was 6.5 days. The median duration of mechanical ventilation was 3.5 days. 34.37% (n = 11) were non-survivors and 65.6% were survivors during ICU stay. Clotting time (CT) was prolonged in 29 (90.6%) out of 32 patients while clot formation time (CFT) was prolonged in 21 patients (65.6%). The mean CT and CFT were 206.66 seconds and 122 seconds, respectively. Median CT (234 seconds) was more prolonged among scrub patients admitted with septic shock than sepsis (130 seconds), though it was not statistically significant. CFT was slightly more in patients with sepsis (138.44 seconds) as compared to septic shock patients (128.83) (p = 0.79). CT was significantly prolonged among non-survivors (272 seconds) than survivors (144 seconds) (p = 0.03). 25% of patients had a decreased A10 value while 9% of patients had a decreased MCF value. A10 was more reduced among non-survivors (47.91 mm) than survivors (51.57 mm), though it was not statistically significant. CFT was significantly prolonged among non-survivors (272 seconds) than survivors (144 seconds) (p = 0.03). 25% of patients had a decreased A10 value while 9% of patients had a decreased MCF value. A10 was more reduced among non-survivors (47.91 mm) than survivors (51.57 mm), though it was not statistically significant. Conclusion: Despite having prolonged clotting time in ROTEM assay, patients with scrub typhus in our study cohort had increased thrombotic complications. This is assumed to be secondary to consumptive coagulopathy associated with scrub typhus. Larger data are needed to validate these results.

89. Role of Potential Biomarkers in Management and Prognosis of CoronaVirus Disease (COVID-19) (Conference Abstract ID: ABS0089)

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Aim and background: Coronavirus disease is a global pandemic. A significant majority of patients present with mild symptoms but some of them develop into severe disease. One of the key issues has been the very high volume of patients presenting to health centres or hospitals during the outbreak. It clearly overwhelms the human and mechanistic capacities available, especially the need for critical care support. Therefore, early and effective predictors
of clinical outcomes are required for risk stratification. **Objective:** Identification of biomarkers that can be used as an early and helpful marker to improve the management of COVID-19 patients and as a prognostic marker. **Materials and methods:** This is an ongoing hospital-based retrospective study on patients who were admitted to COVID wards/ICU at IGGM. Patients are divided into 3 groups – mild-moderate; severe; and critical based on their clinical presentation on admission. Several biomarkers like WBC, platelets, N/L, CRP, LDH, S. ferritin, d-dimer, CPK-MB, serum creatinine, BUL, SGOT, SGPT, and serum albumin were analysed before and after treatment. **Results:** 110 patients were enrolled in this study until now. Out of which, 36 were classified into mild-moderate, 56 into severe, and 18 into critical. There was no mortality in the mild-moderate group, 37 deaths in the severe, and 13 deaths in the critical group. As all mild-moderate patients were discharged and the majority of critical patients expired, biomarkers were compared between severe patients who were discharged vs severe patients who died. Out of these various biomarkers, CRP was significantly decreased during the course of treatment in severe patients who were discharged (p = 0.004) in comparison to severe patients who died where CRP was significantly increased (p = 0.001) (p value of difference being 0.00001). There was also significant change in ferritin levels (p = 0.006), while other biomarkers like WBC (p = 0.07), platelets (p = 0.066), N/L (p = 0.3), LDH (p = 0.06), d-dimer (p = 0.1), CPK-MB (p = 0.49), serum creatinine (p = 0.05), urea (p = 0.06), S. albumin (p = 0.3), SGOT (p = 0.07), and SGPT (p = 0.25) did not show promising results. As CRP was most significant in determining the prognosis of patients, various treatment protocols were analysed by comparing CRP before and after treatment. Severe patients were divided into 2 groups, who took injection remdesivir along with antibiotics, LMWH, systemic steroids vs those who did not, and CRP level was compared, but the difference was not significant (p = 0.06). CRP level was also compared in patients receiving steroids for > 10 days vs < 10 days (p = 0.18). Pre- and post-treatment CRP was also compared for injection tocilizumab, tablet fevipiravir, hydroxychloroquine, doxycycline, but none of them were able to decrease CRP significantly (p > 0.05) in the severe or critical group but these drugs were effective in reducing CRP significantly (p < 0.05) when given in mild-moderate group or if the treatment was started early. **Conclusion:** Increment in CRP and ferritin could effectively predict clinical outcomes and could be used for risk stratification but no available drug is effective in decreasing these biomarkers significantly in the severe or critical group.

**90. Daily Assessment of Fluid Balance and Weight in the Intensive Care Unit Using Electronic Bedside Weight Measurement and Outcome: Prospective Observational Study (Conference Abstract ID: ABS0090)**


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**Introduction:** Early and aggressive fluid therapy is a critical aspect of initial acute resuscitation in critically ill patients. However, one important aspect of fluid resuscitation is fluid overload, which has been proven to show an impact on morbidity and mortality of patients in the ICU. There are many methods in which fluid balance can be measured one of which is a simple daily weight monitoring, which is difficult as most of the patients are on multi-modal monitoring. Recently, a simple bedside electronic weighing device which can provide continuous weight tracking has been developed, where the weight of the patient can be assessed without any change in the patient's position. The device consists of four segments. Each segment consists of four highly accurate, reliable load cells which are anchored and interconnected. Once the device is anchored, the mattress is laid on top of it and secured in place using mattress retainers. The overall design is such that any weight that is kept on top of the mattress shall be measured by the underlying load cells in the form of strain that is proportional to the load that is kept on them. Thus, when a patient lies on top of the device, it measures the strain and these signals are captured and processed by a high precision ADC front end unit, which shares load cell information with the display unit where data are processed and displayed. Using this device we sought to compare the daily fluid balance, and patient's weight compared to the outcome. **Materials and methods:** This is a prospective observational study. All patients admitted to the ICU/HDU with multi-organ failure, requiring ICU stay of >3 days were included. Patients staying <3 days in ICU were excluded. Statistical analysis: As an observational study, this design aims to establish the correlation between fluid balance, daily weight assessment, outcome, and length of stay in ICU. **Results:** During the study period, the mean (SD) hospital stay of the 14 participants was 3.56 (1.50) days. 548 weight measurements were taken. Correlation between changes in body weight (ΔBW) and fluid balance (ΔFB) was weak r = −0.171 of 47 observations (95% CI: −0.437 to 0.122, p = 0.25). **Conclusion:** This innovative technology reliably tracks the change in weight, in a time-bound manner among critically ill patients. Variation in ΔBW among critically ill patients is not determined by ΔFB alone. Further studies evaluating the correlation between documented fluid removal (while on renal replacement therapy) and ΔBW are needed to apply this innovative technology regularly.
with a RASS score range of −2 to +4. The data in this single-center prospective observational study were taken between September 2020 and August 2021. Data were collected for APACHE-II and PRE-DELIRIC scores within 24 hours of ICU admission and delirium was assessed twice daily with CAM-ICU score during the entire ICU stay. 190 patients were included and screened using the CAM-ICU method so far. Patients who had at least one positive CAM-ICU screening or haloperidol administration during the entire ICU stay were considered delirious and quantitative and not normally distributed variables were compared using the Mann–Whitney test and a ROC curve was designed to assess the accuracy of the PRE-DELIRIC prediction model. Results: The median age of patients were 58 (44–65.25) years, median APACHE-II score 14 (12–17) points with overall 12% (23/190) mortality in the study group. Delirium was diagnosed in 59 (31%) of 190 patients. Data used for validation of the PRE-DELIRIC model resulted in an area under the curve of 0.832 (p < 0.05, 95% CI 0.781–0.883). Sensitivity and specificity for the patients with 20% risk were, accordingly, 96% and 40%; 40% risk – 45.8% and 54%, 60% – 68%, and 100%.

Conclusion: Delirium prediction using the PRE-DELIRIC model is useful when used within 24 hours of ICU admission. Assessing the probability of delirium using the PRE-DELIRIC model is feasible and simultaneous preventive measures can be implemented in ICUs to prevent delirium in the critically ill.

92. Organic Plant-based Pesticide induced Methemoglobinemia: A Diagnostic Challenge (Conference Abstract ID: ABS0092)
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Introduction: Methemoglobinemia is a potentially life-threatening condition, which can present with non-specific clinical features. The lack of specificity increases the probability of misdiagnosis and may cause delays in diagnosis and management. Methemoglobinemia is an increased concentration of methaemoglobin in the blood which is an altered state of haemoglobin whereby the ferrous form of iron is oxidised to a ferric state, rendering the heme moiety incapable of carrying oxygen leading to tissue hypoxia. We report herein a case of acquired methemoglobinemia caused after an intentional ingestion of biopesticide/fertiliser? Case report: A 33-year-old Indian female was referred to our hospital from the local district government hospital with an alleged history of deliberate self-ingestion of around 20–30 mL of an unknown biopesticide/fertiliser. The patient was initially taken to a local hospital where a stomach wash was given with 2 L of normal saline. The patient had documented a low saturation level which failed to improve on oxygen supplementation with an altered mental status. The patient’s condition continued to deteriorate and the patient was referred to our hospital for intensive care. In the ER, the patient was tachypnoeic with a respiratory rate of >32 cpm with pulse oximetry of 86% with 8 L supplemental oxygen via non-rebreathable mask. The patient had a Glasgow coma scale of 8/15 and was irritable, agitated not obeying commands and was intubated in view of altered mental status put on mechanical ventilation and was shifted to the intensive care unit for further management. On arrival to the ICU, around 8 hours after ingestion of the compound. The patient was sedated and was found to have pale grey lips and cyanotic nail beds. The patient showed a saturation of 86% and was still having central cyanosis and hence FiO₂ was increased to 100% which however failed to show any improvement. ET tube placement was once again confirmed and the ventilator circuit was checked for any leaks or kinks. Following this, a repeat ABG was collected and the patient was found to have muddy/chocolate coloured blood which failed to oxidise/change colour on exposure to air. An arterial blood gas analysis sent to the lab revealed a PaO₂ of 480 mm Hg with 100% FiO₂. Thus, a diagnosis of acquired methemoglobinemia secondary to ingestion of insecticide, probable nitrate poisoning was reached based on: Discrepancy between SpO₂ and PaO₂ levels. Failure of supplemental oxygenation to improve SpO₂ and persistent cyanosis. Dark brown/chocolate coloured blood. The diagnosis was confirmed with subsequent measurement of MetHb levels which were found to be very high (45.2%) IV Methylene blue @ 1–2 mg/kg (100 mg) was administered i.v. over 10 minutes which rapidly decreased the MetHb levels from 45.2% to 8.7% and also dramatically improved the SpO₂ to 100%. A total of 3 boluses were given for a total of 300 mg methylene blue over 4 hours which resulted in a gradual resolution of cyanosis and further reduction of MetHb to 3.6%. An attempt was made to analyse the compound ingested however lack of contents and failure to avail new samples hindered efforts. Patient sensorium further improved and was weaned of ventilator support and extubated after 2 days. Patient was then kept on venturi face mask and was then discharged by day 4, with a room air saturation of 96% and MetHb level <2%.

Discussion: Exposure to some oxidant substances can induce methemoglobinemia even in healthy individuals. This increased methaemoglobin concentration is lowered to normal levels by means of the cytochrome b₅ reductase enzyme found in red blood cells. In some cases, the compensation mechanism does not function properly, and increasing levels of methaemoglobin cannot transport O₂. This shifts the oxygen dissociation curve to the left and decreases the delivery of oxygen to the tissues. The initial sign of methemoglobinemia is cyanosis and the diagnosis should be considered in all patients who present with cyanosis, particularly if it does not improve with supplemental oxygen. As the levels reach 30–40%, symptoms such as headache, fatigue, tachycardia, weakness, and dizziness are experienced. Methemoglobin levels of 60% produce lethargy, convulsions, and coma. Methemoglobin levels of >70% are generally lethal, although survival has been reported with a level of 94%. The first line of treatment is intravenous methylene blue. Alternative treatments include ascorbic acid or N-acetylcysteine. Exchange blood transfusion is recommended when methylene blue is ineffective. Methylene blue is contraindicated in patients with known glucose 6-phosphate dehydrogenase (G6PD) deficiency, because methylene blue depends upon NADPH generated by G6PD in the reduction process of methaemoglobin. As a result, this medication may not only be ineffective but is also potentially dangerous, since methylene blue has an oxidant potential that may induce haemolysis in G6PD deficient subjects. The levels of methaemoglobin should fall significantly 30 to 60 minutes after the first dose. This drug is relatively contraindicated in renal failure. During treatment, the urine has a bluish tint. The same occurs, in varying degrees, to the skin and mucous membranes, hindering the interpretation of cyanosis after the treatment.

Since this patient’s level of methemoglobinemia was 45% and systemic toxic symptoms were in foreground IV methylene blue
was initiated instead of antioxidant therapy. Nitrites and aniline derivatives have been reported to be among the chemical agents that most commonly cause methemoglobinemia. A review of the literature showed that the lethal dose of sodium nitrite in adults is approximately 2.6 g. The onset of methemoglobinemia occurs usually with 20 to 60 minutes of chemical exposure. The insecticide our patient had consumed did not have its contents specified and was marketed as an environmentally friendly product which was non-toxic. Research has shown that biological extracts are known to be rich in nitrogenous products and may potentially cause methemoglobinemia. As more and more natural and herbal products are being marketed, treating clinicians should be cautious of the numerous compounds without details of the composition which can cause methemoglobinemia. This case report highlights the importance of considering the possibility of methemoglobinemia in all patients with exposure to pesticides and biological compounds presenting with cyanosis and saturation gap.

93. Clinical Profile and ECG Changes in Dimethyl Organophosphate Poisoning (Conference Abstract ID: ABS0093)
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DOI: 10.5005/jp-journals-10071-23712A.93

Aim and background: Organophosphates are widely used pesticides, insecticides, fertilizers in industrial domestic settings throughout the world. Their ease of availability has resulted in increased incidences of suicidal and homicidal poisonings. Organophosphates are acetylcholinesterase inhibitors allowing excess accumulation of acetylcholine at various nicotinic and muscarinic receptors throughout the body leading to symptoms of vomiting, diarrhea, breathlessness, excessive salivation, and convulsions. Signs include bradycardia, fasciculations, miosis, neck muscle weakness, oronasal frothing, increased bronchial secretions, and altered sensorium. Patients with dimethyl organophosphate poisoning present earlier and have worse prognosis and outcome due to water soluble nature and shorter half-life of ageing. Cardiac complications often accompany poisoning with these compounds and include sinus tachycardia, sinus bradycardia, prolonged QTc interval, ventricular premature complexes. Objectives: To study the clinical profile and electrocardiographic changes of dimethyl organophosphate compound poisoning.

Materials and methods: Twenty-five consecutive cases admitted in medicine wards and ICU with exposure to dimethyl organophosphate poisoning satisfying inclusion criteria were studied for their clinical profile and electrocardiographic changes. Peradeniya organophosphorus poisoning score and serum cholinesterase levels were estimated at the time of admission. Patients were followed throughout their hospital stay. Complications like a need for mechanical ventilation intermediate syndrome and a need for tracheostomy were noted. The outcome of the pt was recorded as survived or death. Results: In 25 pts of dimethyl compound poisoning, poisoning was more common in males 72% than females 28% of which 92% were suicidal and 8% were accidental. Most common symptoms include excessive salivation in 76% of patients, followed by nausea, vomiting, diarrhea, and breathlessness. Miosis was the most common sign present in 72% of cases followed by fasciculations, bradycardia, increased bronchial secretions, and oronasal frothing. Complications like the need for mechanical ventilation were seen in 75% of patients, an intermediate syndrome in 8%. The most common ECG finding seen was sinus tachycardia in 36% pts, sinus bradycardia in 20%, QTc prolongation in 4%. Overall mortality was 16%. Conclusion: Patients admitted with dimethyl organophosphorus compound poisoning are associated with worse outcomes and significant ECG changes.

94. An Unusual Case of Refractory Hypermagnesemia (Conference Abstract ID: AB50094)
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Introduction: Symptomatic hypermagnesemia is usually rare and considered to be caused by excessive oral administration of magnesium salts or magnesium-containing drugs such as laxatives and antacids particularly when used in elderly patients with renal insufficiency or bowel movement dysfunction. Here, we report a case of an elderly patient with underlying chronic liver disease with a history of intake of ayurvedic medication for the gastric disorder, resulting in severe hypermagnesemia leading to fatal outcomes despite being managed with all supportive treatment including renal replacement therapy. Case Report: Our patient, a 67-year-old male was diagnosed with decompensated chronic liver disease with ascites, encephalopathy, acute kidney injury, and dys电解质的紊乱。He was managed with empirical antibiotics, diuretic, and other supportive measures for encephalopathy along with diagnostic and therapeutic large-volume paracentesis. Despite anti-encephalopathy measures and normal CT head and EEG, sensorium worsened requiring invasive mechanical ventilation. ECG showed sinus bradycardia. S. Mg++ levels were noted to be very high (10.1 mg/dL) and immediately calcium gluconate infusion and saline diuresis was started. SLED was initiated for 8 hours. Post two sessions of SLED serum Mg++ value was 5.6 mg/dL, sensorium improved and the patient got extubated. The patient was further evaluated for the cause, all the investigations remained inconclusive. History of intake of Ayurvedic medication for chronic constipation and flatulence was given by the family and the samples of the same were sent for biochemical analysis. A sample revealed a very high concentration of magnesium. The patient's condition further deteriorated due to septic shock. Daily dialysis and bowel decontamination was continued. Despite all possible efforts, severe hypermagnesemia persisted and unfortunately patient expired on the fourteenth post-admission day. Conclusion: Ayurvedic medications may be beneficial to health but can be potentially lethal if not taken under medical supervision. They can lead to electrolyte disturbances such as severe hypermagnesemia which can be life-threatening. Such consequences must always be taken into account when using these medications for a prolonged period of time. This case emphasizes a high index of suspicion in presence of an appropriate clinical setting, the importance of serum magnesium monitoring, and prompt initiation of treatment including renal replacement therapy for a successful outcome.
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95. A Case of Acromegaly Presenting as Diabetic Ketoacidosis: A Case Report (Conference Abstract ID: ABS0095)

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**Background:** Annual incidence of acromegaly is 3–4 per million. (1) Incidence of IGT and DM is approximately 20–25% in acromegaly. (2) Diabetic ketoacidosis is seen in 1% of all cases of acromegaly. (3) In most of the cases, DM resolved with surgery of pituitary.

**Case Report:** A 30-year-old male presented with complaints of vomiting, difficulty in breathing for 1 day. On general examination, the patient was tachypneic, had tachycardia, normotensive, and was maintaining saturation at room air. The patient had prognathism, large-sized hands and feet, coarse facial features were noted. The patient was stuporous and bilateral plantar was extensor and otherwise, a systemic examination was normal. Random blood sugar was 500 mg/dL, on arterial blood gas analysis severe metabolic acidosis was seen, urinary ketones were large. HbA1C was 10.4%. The patient was diagnosed as a case of freshly detected diabetes mellitus with diabetic ketoacidosis (DKA) with metabolic encephalopathy and was admitted to ICU and DKA was treated. Subsequently, the patient improved and became conscious and oriented but continued to have uncontrolled diabetes irrespective of treatment. On day 3, the patient developed left-sided ptosis and difficulty in vision. Fundus examination showed bilateral papilledema. MRI brain was done which showed pituitary macroadenoma. Bilateral lower temporal quadrantanopia seen on perimetry. GH level was elevated. FSH, LH, ACTH, TSH, T3, T4 were normal. The patient was then referred to a neurosurgeon. Tumour was excised and histopathology confirmed it as pituitary macroadenoma. After excision of pituitary tumour, ptosis resolved, vision improved and diabetes resolved gradually and the patient is euglycemic at present.

**Conclusion:** DKA is a rare presentation of Acromegaly. Diabetes is reversible after surgical removal of pituitary tumour.

**References**
1. Dosi RV, Patell RD, Joshi HK. Diabetic ketoacidosis: an unusual presentation of acromegaly.

Fig. 1: Patient in June 2017

96. Acute Coronary Syndrome Secondary to Allergic Coronary Vasospasm (Kounis Syndrome): A Case Series (Conference Abstract ID: ABS0096)

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**Aim and background:** Kounis syndrome is an occurrence of an acute coronary syndrome associated with mast cell and platelet activation in the setting of hypersensitivity in allergic or anaphylactic insult. many drug and environmental exposure has been reported as inducer and the mechanism of KS remained unknown till now. **Materials and methods:** We evaluated 6 patients during a period of 4-year retrospectively patient consider patient diagnosed as Kounis evaluated for etiology ECG finding and 2d echo eosinophil level and tryptase level finding cag finding blood parameter responds to steroid therapy. **Discussion:** We evaluated 6 rare cases of KS patients during a period of 4 years presented as Kounis syndrome after evaluating patients various etiologies found like snake bite, insect bite, antibiotic radiocontrast. All patients were retrospectively inspected for serum tryptase and eosinophil levels, with ECG finding suggestive of anterior wall MI in 4 of patients with inferior wall MI in 2 patients. All patients improved with steroid and antihistaminic later send to further management. **Conclusion:** Kounis syndrome is not rare but rarely diagnosed. its necessary to recognized ks and various inducer especially for patient suffering from vasospasm cardiac attack concentrating in a special period blood test of eosinophil and tryptase may contribute to diagnose ks and an antiallergic agent might helpful for controlling ks attack.

**Keywords:** Kounis syndrome, Acute coronary syndrome.
97. Clinical Profile of Critically Ill Elderly Patients and Prediction of Outcome Using Sofa Score (Conference Abstract ID: ABS0097)
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Aim and background: Approximately one-half of all patients admitted to the ICU are over age 65. SOFA score is an easy bedside investigation available in any critical care setting which does not require any specially trained manpower. Using SOFA scores would help in triaging patients and identifying those elderly patients who are critically ill and require specialised care. Early interventions and care will therefore help in a long way to improve health and help them lead a better quality of life after discharge. SOFA score is designed to objectively quantify the degree of organ failure over time, organ-by-organ, in individuals or groups of individuals.

Objectives: To calculate the SOFA score in elderly (age >65 years) critically ill patients on admission and at 48 hours and co-relate the ∆SOFA with the outcome (survivors vs non-survivors). Materials and methods: This study was a hospital-based, prospective cohort study. 100 consecutive critically ill elderly patients satisfying the inclusion criteria, admitted in MICU/ICCU and medicine wards, were enrolled in the study after taking written informed consent. A detailed history of the present illness and any significant past history, history of co-morbidities was taken and details of prior treatment were noted. Lab investigations with special reference to platelet count, serum creatinine, bilirubin, and ABG, other relevant lab and radiological investigations was done depending on the diagnosis. The treatment plan was noted with special reference to use of vasopressors, need for ventilatory support, tracheostomy, inotropes and need for hemodialysis was noted. Patient was followed up throughout his hospital stay. Outcome was recorded as survivor or non-survivor. SOFA score on admission (SOFA initial), and after 48 hours (SOFA 48) was calculated and change in the SOFA score (∆SOFA) was determined.

Results: In our study, the mean SOFA score at admission was significantly higher in non-survivors. The mean SOFA score at 48 hours was 8.47 ± 4.05; it was 8.86 ± 1.78 and 11.19 ± 3.01 among survivors and non-survivors, respectively. The mean SOFA score at 48 hours was higher among non-survivors. The mean delta SOFA score was 0.58 ± 1.22 and 2.77 ± 1.22 among survivors and non-survivors, respectively.

Conclusion: A SOFA scoring system at the time of admission of the critically ill elderly could help in identifying those patients who require urgent and preferential ICU admission. Sequential scoring like SOFA after 48 hours and delta SOFA can be more helpful in monitoring and predicting the clinical outcome than one-time scoring. A change in SOFA score will indicate improvement or deterioration in clinical condition and guide further therapy.

98. Bedside Lung Ultrasonography for Assessment of Lung Recruitment in Prone Position Ventilation in ARDS (Conference Abstract ID: ABS0098)
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Background: Prone positioning (PP) improves the outcome of ARDS patients with a PaO2/FiO2 ratio of <150 mm Hg and is therefore recommended. Lung ultrasound (LUS) provides accurate information on lung status, lung aeration, lung recruitment, lung perfusion, and lung morphology. As compared with chest radiograph or computed tomography, LUS reduces the risks associated with intrahospital transfer and irradiation. Therefore, it is reasonable to hypothesize that LUS could predict the intensity of recruitment response resulting from PP.

Aim and objectives: Predict the magnitude of lung recruitment response after prone position by using bedside LUS in moderate to severe ARDS. Materials and methods: An observational and prospective study will be conducted in the department of critical care, care hospitals, banjara hills over a period of 2 years (January 2020 to October 2021). All adult (>18 years) ARDS patients with severe hypoxemia persisting from 12 to 24 h will be included according to the following criteria: PaO2/FiO2 ratio <150 mm Hg with FiO2 at least 0.6, positive end-expiratory pressure (PEEP) at least 5 cmH2O, and tidal volume close to 6 mL/kg of predicted body weight (PBW). LUS will be performed according to international guidelines. 1–5 MHz convex probes will be used. All intercostal spaces of the upper and lower parts of the anterior, lateral, and posterior areas of the left and right chest wall will be examined. Four LUS exams will be performed for each patient 1 h before and after each reversal of position. Data will be collected 1 h before PP (LUS 1), 1 h after PP (LUS 2), 1 h before the patient is turned back to the supine position (LUS 3), and 1 h after the patient is returned to the supine position (LUS 4). An ultrasound reaeration score will be calculated as previously described from changes in the ultrasound pattern of each area examined between each ultrasound. A positive reaeration score means an aeration gain; a negative reaeration score corresponds to an aeration loss. Patients will be classified as having focal ARDS if they had at least four normally aerated lung areas (scored 0 by the lung ultrasound score). Results: Ongoing study. Conclusion: Published after the study.

99. A Retrospective Study of Microbiological Profile and Resistance Pattern in Early- and Late-onset Ventilator-associated Pneumonia Among COVID-19 Patients of a Tertiary Care ICU (Conference Abstract ID: ABS0099)
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Aim and objectives: To compare the microbiological profile, resistance pattern, and outcome in early- and late-onset ventilator-associated pneumonia (VAP) among severe COVID-19 patients in a tertiary care ICU. Materials and methods: It is a retrospective study conducted in the Department of Critical Care Medicine, Fortis Hospitals Pvt Ltd, Bangalore over a period of 15 months (April 2020 to June 2021). It included all patients who had a first episode of VAP confirmed by positive tracheal aspirate culture. Patients on mechanical ventilation for <4 days (48–96 hours) were included in the early-onset VAP group and 5 days or more were included in the late-onset VAP group. Data collected from case
records including demographic and clinical characteristics of the patients at ICU admission, data related to the disease course, ICU treatments (prior antibiotic exposure and immunomodulatory therapy), mortality and, finally, data related to each VAP episode (date of sampling, implicated germs and their detailed biochemical testing identified any significant growth, and antibiotic sensitivity testing report). Results: We analysed a total of 404 patients, out of which 149 had VAP. The incidence of VAP was found to be 36.8%, out of which 59 (39.5%) had early-onset VAP and 90 (60.5%) had late-onset VAP. The most common organisms isolated from early- and late-onset VAP was Klebsiella pneumoniae. Among early-onset VAP, 42% of Klebsiella pneumoniae were extended-spectrum beta-lactamase (ESBL) with carbapenemase-producing strains and in late-onset VAP 85% of Klebsiella pneumoniae strains were ESBL with carbapenemase-producing strains. The overall mortality in our study was 65.7%. Conclusion: VAP is one of the most common complications in critically ill mechanically ventilated COVID-19 patients. The underlying immune nature of the virus and the various immunomodulating therapies used for the same has contributed towards a high incidence of VAP in COVID-19 pneumonia patients. Knowledge of your local microbial flora can help in initiating the appropriate therapy at the correct time and hence improve clinical outcomes.

100. Siadh Secondary to Pulmonary Tuberculosis: A Case Report (Conference Abstract ID: ABS00100)
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Background: The frequency of hyponatremia in hospitalized patients has been estimated to be 15% in many studies. Pulmonary tuberculosis (PTB) is a common disease with a high prevalence of mortality and morbidity in developing countries. Subclinical electrolyte imbalance, including hyponatremia cases are common in PTB. Pulmonary tuberculosis can induce hyponatremia via various mechanisms like the local invasion of the hypothalamus or pituitary, invasion of the adrenal gland, tubercular meningitis, and inappropriate ADH secretion through pulmonary infection. We report a case of a patient who was admitted for acute disturbance in consciousness. Diagnosis of SIADH secondary to PTB was done. Case report: A 48-year-old male patient was brought by a relative with complaints of fever for 1 month and altered sensorium for 1 day. There was no history of vomiting or intake of medication. On physical examination, the patient was stuporous with a Glasgow coma scale of 8/15. Afebrile, pulse-90/minute, blood pressure-120/80 mm Hg, blood sugar level was 120 mg%, there was no edema feet and no sign of dehydration. Physical examination revealed no sign of meningeal irritation, tone and reflexes were normal planter was flexor. No cardiovascular abnormalities detected on systemic examination. On respiratory examination in the left infraclavicular area crepitation was present. A blood investigation was done on the day of admission. Kidney function test showed, blood urea-21 mg%, serum creatinine-0.36 mg%, S.Na+ = 114 mEq/L, S.K+ = 4.5 mEq/L. Urine Na+ was 132.87 mmol/L, Urine K+ was 95.5 mmol/L. Blood osmolality was 238 mosm/kg H2O, urine osmolality was 364 mosm/kg H2O. Complete blood count, liver function, thyroid profile, status was all normal. CSF fluid examination and CT scan of head was normal. HIV was negative by ELISA. HRCT thorax revealed multiple centrinodular opacities with linear branching giving tree in bud appearance at left upper lobe (Figs 1 and 2). Based on clinical features and laboratory parameters diagnosis of SIADH secondary to pulmonary TB was made. Sodium correction initially was done by 3% normal saline (20 mL/hour), then tablet tolvaptan an AVP antagonist 15 mg/day was started. Anti-tubercular therapy (AKT) was started. On 7th day of hospitalization, patient sensorium improved and plasma level of sodium became normal and patient discharge on AKT. Conclusion: Complications like meningitis, encephalitis, and tuberculoma are common cause of altered sensorium in PTB but the possibility of SIADH should also be considered.

References


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Aim and background: Miller Fisher is a rare, limited, and regional variant of Guillain–Barré syndrome. It is characterised by a triad of areflexia of limbs without weakness, ataxia, and ophthalmoplegia, often with pupillary paralysis. This variant accounts for approximately 5% of all cases and is associated with ganglioside GQ1b antibodies. Anecdotal data suggest a better response with intravenous immunoglobulin than plasmapheresis in Miller Fisher syndrome. However, in a limited resources setup, the role of steroids in treatment is still unexplored. Objective: To document the clinical features, investigations, treatment, and recovery in the case of Miller Fisher syndrome.

Materials and methods: A 45-year-old female with no pre-existing co-morbidities, presented with complaints of acute onset diplopia and nasal regurgitation of fluids for 2 days. On examination, bilateral ptosis with involvement more on the left side and total ophthalmoplegia was present. Cranial nerves IX and X were involved on the left side with ipsilateral palatal palsy and absent gag reflex. The patient had no power loss in any of the limbs but areflexia could be demonstrated. Ataxic gait with impaired tandem walking and a tendency to fall on either side were present. To differentiate from ocular Myasthenia gravis, the patient was tested for improvement with injectable neostigmine and an ice-pack test was performed, with no improvement. Anti-Ach receptor antibody and anti-MUSK antibody tested negative. There was no incremental response on the repeated nerve stimulation test. CSF analysis demonstrated albumin-cytological dissociation. Ganglioside GQ1b antibody tested positive, confirming the diagnosis of Miller Fisher syndrome. Due to monetary constraints and the unavailability of IVIg in our hospital, the patient was administered pulse therapy of methylprednisolone followed by prednisolone for 10 days.

Results: The patient showed a rapid response to steroids with complete recovery of cranial nerve palsies in 2 days. The total ophthalmoplegia recovered gradually over a period of 10 days. The patient has no residual impairment at present. Conclusion: Although various studies demonstrate no benefit of steroids in Guillain–Barré syndrome, research is lacking in patients with the Miller Fisher variant. In a resource constraint healthcare system, steroids may prove to be beneficial in variants of Guillain–Barré syndrome. However, further studies are needed for demonstrating credible benefits.

102. Early Predictors of Success of Non-invasive Positive Pressure Ventilation in Hypercapnic Respiratory Failure (Conference Abstract ID: ABS0102)

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Table 1: Clinical and ABG parameter (group I)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Basal</th>
<th>1 Hour Group I</th>
<th>4 Hour Group I</th>
<th>24 Hour Group I</th>
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<td>pH</td>
<td>7.2 (0.02)</td>
<td>7.18 (0.04)</td>
<td>7.29 (0.02)</td>
<td>7.32 (0.02)</td>
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<tr>
<td>PCO₂</td>
<td>72.6 (2.8)</td>
<td>75.6 (8.01)</td>
<td>64.4 (2.24)</td>
<td>51.9 (1.6)</td>
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<td>PO₂</td>
<td>63.8 (2.2)</td>
<td>62.8 (7.3)</td>
<td>69.07 (1.9)</td>
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<td>HR</td>
<td>130.7 (3.1)</td>
<td>132.8 (4.4)</td>
<td>121.58 (3.3)</td>
<td>110.8 (2.9)</td>
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<tr>
<td>RR</td>
<td>32.4 (2.6)</td>
<td>32.4 (2.4)</td>
<td>32.13 (2.8)</td>
<td>32.15 (2.3)</td>
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Introduction: The first choice of treatment of patients with acute respiratory failure (ARF) is always mechanical ventilation. Patients with ARF can be ventilated further with positive or negative pressure, invasively or non-invasively. Non-invasive ventilation (NIV) is the purveying of ventilatory support to the lungs without the use of an endotracheal airway. Non-invasive positive pressure therapy can be delivered by Bi-level positive pressure ventilation (BiPAP) or continuous positive airway pressure (CPAP). In BiPAP, two different pressures are used viz. inspiratory positive airway pressure (IPAP) and expiratory positive airway pressure (EPAP), though CPAP maintains a constant positive airway pressure all over the respiratory cycle. The role of NIV in hypoxemic ARF unrelated to COPD is controversial while there is strong evidence to support the use of NIV in COPD. Aims and objectives: To study the indication of NIPPV in patients with hypercapnic respiratory failure. To evaluate the clinical, laboratory, and ventilatory parameters concerning improvement or deterioration in the general condition of the patient. To predict the outcome in the form of weaning from NIPPV or requirement of invasive ventilation. To compare APACHE II score with the outcome. Materials and methods: We have conducted a prospective randomized study in patients with hypercapnic respiratory failure who needed non-invasive ventilation (NIV) at admission. A total of 100 patients were selected randomly who was fitting in inclusion criteria. We have studied their important clinical (heart rate, respiratory rate), ABG, and ventilatory parameters were revaluated at 1, 4, and 24 hours to assess their correlation with the success of NIV. We have compared the APACHE II score at admission and 24 hours for both groups. Results: Out of 100 patients, 27 patients had deterioration on NIV and were intubated. They are placed in the NIV failed group (group II, \( n = 27 \)). Those who recovered with NIV are placed in NIV successful group (group I). Heart rate (HR), respiratory rate (RR), \( \text{pH} \), \( \text{pO}_2 \), and \( \text{pCO}_2 \) were studied for all cases at admission, at 1 hour, 4 hours, and 24 hours. There was improvement in all the parameters in the first 24 hours in group I. When we consider the same parameters in group II patients (Failed NIV), we can notice the improvement to a very little extent at every step. In group I that is successfully treated with NIV, the APACHE score was significantly reduced in 24 hours. In group II, that is failed NIV cases, the APACHE score was significantly increased in 24 hours. We have also observed that the requirement of EPAP and IPAP levels were progressively decreasing in group I (successful NIV) and progressively increasing in group II (failed NIV). Conclusion: APACHE II score, heart rate, respiratory rate, \( \text{pH} \), and \( \text{pCO}_2 \) levels at admission are the early predictors of success of NIV in hypercapnic respiratory failure. We can decide on non-invasive or invasive ventilation for individual patients with fair precision, using the cut-off values of these indicators. It will help to avoid complications of unindicated invasive ventilation or complications of delayed intubation when it is indicated.

<table>
<thead>
<tr>
<th></th>
<th>Successful NIV</th>
<th>Failed NIV</th>
<th>Paired t-test value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>APACHE II at admission</td>
<td>28.82</td>
<td>44.67</td>
<td>13.03</td>
<td>0.001</td>
</tr>
<tr>
<td>APACHE II at 24 hours</td>
<td>23.8</td>
<td>47.14</td>
<td>-2.91</td>
<td>0.007</td>
</tr>
</tbody>
</table>

Aims and objectives: Gastrointestinal symptoms like abdominal pain can be atypical presentations associated with coronavirus disease. This case report describes the presentation of acute pancreatitis in a patient with moderate COVID-19 infection. Materials and methods: Data were collected from a patient who was admitted with acute pancreatitis as sequelae of COVID-19 infection in our intensive care unit in June 2021. Case presentation: A 25-year-old female with no comorbidities presented to our emergency department with complaints of fever and dry cough for 10 days for which she had taken treatment at home. COVID RTPCR was negative and CT severity was 10/25. She also complained of abdominal pain with vomiting for 2 days. So she was admitted to our hospital on the tenth day of her illness. Laboratory analysis showed >3 times elevation of serum lipase. CT abdomen showed acute pancreatitis with gallbladder sludge. Causes of pancreatitis like gallbladder stones, alcohol, hypercalcemia, and hypertriglyceridemia were excluded by history and investigations. She was diagnosed with acute pancreatitis due to COVID-19. C-reactive protein and D dimer was highly elevated. She was admitted in ICU and was started on conservative management with IV fluids and bowel rest. Oral intake was resumed gradually as tolerated. The patient was maintaining adequate oxygen saturation on room air. Her repeat COVID RTPCR was again negative. However, her CT severity had increased to 14/25. Her total antibody SARS-CoV-2 was highly reactive. She had severe pain which was not improving despite multimodal analgesia which included opioid infusion. She had bilateral minimal pleural effusion and consolidation and required 2–4 L oxygen support. Repeat CT abdomen after a week showed acute necrotizing pancreatitis with gross pancreatic ascites and partial splenic vein thrombosis (modified CT severity index 8). On day 7 of admission, she developed a fever. Blood and urine cultures were sent and empirical antibiotic was started. Urine culture showed Klebsiella pneumoniae and antibiotic was escalated as per sensitivity pattern. Her pain scores persisted to be high despite all measures. On day 14, she developed abdominal distension. Intra-abdominal pressures were normal and repeat CT abdomen showed extensive free fluid with dilated bowel loops which was likely paralytic ileus. A CT-guided pigtail was inserted for continuous drainage of fluid. The asctic fluid culture showed no organism. Her abdominal distension gradually reduced. We tapered the requirement of opioids day by day and she got symptomatically better. She could tolerate oral feeds better, off oxygen support, and was shifted to wards with pigtail catheter in situ. She stayed in ICU for 26 days. She was doing better in wards and was discharged home after 5 days with oral anticoagulant and other symptomatic medications and was advised for gastroenterology follow-up after 10 days. Results: A patient was diagnosed with acute pancreatitis associated with SARS-CoV-2 and was treated accordingly. Other causes of acute pancreatitis were excluded in the patient including alcohol, biliary obstruction/gall stones, drugs, trauma, hypertriglyceridemia, hypercalcemia, and hypotension. Conclusion: This case highlights acute pancreatitis associated with COVID-19.
as a complication associated with COVID-19 and underlines the importance of evaluating and treating patients with COVID-19 and abdominal pain. Keywords: Acute pancreatitis, COVID-19, SARS-CoV-2, Severe acute pancreatitis, Viral pancreatitis.

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Introduction: In the obstetric population, ARDS due to COVID-19 has been found to have worse outcome. Treatment of severe COVID-19 has been a real challenge world over. This case report is aimed at giving an insight to the management of COVID-19 in a pregnant patient.

Case report: A 36-year-old primi with 33 weeks and 2 days of gestation was admitted with fever, cough, and shortness of breath for 4 days. The patient was found to be positive for COVID. The patient was initially admitted in the wards. In view of worsening oxygenation patient was shifted to the ICU. The patient was intubated and initiated on mechanical ventilation. Post intubation patient maintained a saturation of 86–88% with that. Hence, patient was intubated and initiated on mechanical ventilation. Post intubation patient maintained a saturation of 86–88% with 100% FiO2. Within half an hour of intubation, fetal bradycardia was noted. The patient was taken up for an emergency Caesarian section. At birth, the child did not cry and received two cycles of CPR and positive pressure ventilation and was shifted to the NICU. The baby was extubated after days. Postpartum the mother required 70% FiO2 to maintain ventilation and was shifted to the NICU. The baby was extubated and initiated on mechanical ventilation.

Discussion: Pregnancy complicates intubation making it difficult. Proning though not contraindicated may be difficult to achieve in pregnant patients. In our patient, we could prone the patient postpartum with ease. Though Caesarian section was done in view of fetal distress. But postpartum it was easier to ventilate the patient and oxygenation showed steady improvement. AJOG also suggests that a Caesarian section may be considered after 34 weeks in a critically ill COVID-19 patient. We also had the luxury of a neonatal ICU and the neonate could be saved though the mother’s well-being was our priority. Pregnancy and gestational diabetes mellitus and receiving steroids made the patient susceptible to multiple infections which we handled by source control and antibiotics. Conclusion: Though the pandemic is on the decline this case report is an attempt to throw light on the management of the critically ill pregnant patient with ARDS. Cesarean section may aid in the management of the pregnant patient with severe ARDS.

105. Role of High Flow Nasal Oxygenation During Video Laryngoscopy Assisted Intubation in COVID-positive Patients: A Prospective Randomized Control Trial (Conference Abstract ID: ABS0105)
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Aim and background: In adult COVID-19 patients presenting with acute hypoxic respiratory failure, conventional oxygen therapy may be insufficient to meet the oxygen needs. Other considerable options are high flow nasal oxygen cannula (HFNC), non-invasive positive pressure ventilation (NIPPV) preoxygenation is required before endotracheal intubation. The aim of this study is to compare preoxygenation by HFNC and its comparison with conventional mask ventilation in patient requiring intubation in an intensive care unit (ICU). Materials and methods: After obtaining ethical committee clearance, 60 patients requiring intubation in ICU were included in the study. All the patients who were admitted in the COVID ICU, and were not maintaining saturation on a facemask, NIV, or HFNC for these patient decisions of intubation were made. Patients were randomized into two groups. In group M, conventional mask ventilation was done and in group H HFNC was used for preoxygenation. The primary endpoint of the study was the lowest SPO2 during video laryngoscopic intubation. Secondary objectives were time taken for intubation and aerosol generation. Results: Lowest SPO2 was more in the case of group M compared to group H and this difference was significant with p value of 0.00139. Aerosol generation was more in the case of group M compared to group H with p value of 0.009. Time taken for intubation was comparable in both groups. Conclusion: HFNC is a better alternative compared to mask ventilation in COVID-positive patients as better safer apnea time in patient of COVID presenting with acute respiratory failure.

106. Clinical Scoring Method in Cases of Organophosphate Poisoning (Conference Abstract ID: ABS0106)
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Individual clinicians’ subjective assessments of clinical conditions in the case of OP poisoning may differ in their assessment of disease severity. As a result, a variety of descriptive and prognostic evaluation scales (score systems) have been developed. A more objective assessment of the clinical state would allow for a more accurate comparison of treatment protocols and outcomes. Objective: 1. To assess the clinical features of cases of organophosphorus poisoning and grade their severity using the Peradeniya Organophosphorus Poisoning scale (POP scale). 2. To correlate the severity of OP poisoning as POP SCALE with (a) Need to ventilate (b) Duration of hospital stay (c) Occurrence of Intermediate syndrome (d) Serum cholinesterase level (e) Mortality. To determine (APACHE II) score of cases of OP poisoning and correlate with (a) need to ventilate, (b) occurrence of Intermediate
Air leak syndrome consists of pneumomediastinum, subcutaneous emphysema, or pneumothorax is rarely seen in viral pneumonia. The reported incidence of primary spontaneous pneumothorax (PSP) and secondary spontaneous pneumothorax (SSP) is 16.7/100,000 for men and 5.8/100,000 for women, with corresponding mortality rates of 1.26/million and 0.62/million per annum, respectively. The development of air leak syndrome has a significant impact on the outcome of COVID-19 management, increasing morbidity and mortality. In this study, we tried to determine the prevalence of air leak syndrome and its outcome in critically ill COVID-19 patients. Materials and methods: The study was planned as a retrospective study and the records of all patients who were critically ill with COVID-19 infection were included. The records of all patients who reported air leaks syndrome were analysed. Details like history, radiology, details of management of cases and, outcome were recorded. Results: Out of 300 cases of critically ill COVID-19, 20 (6.67%) cases developed air leak syndrome. This included four cases (20%) of right-sided pneumothorax, three cases (15%) of left-sided pneumothorax, four cases (20%) of subcutaneous emphysema, and five cases (25%) of pneumomediastinum. Four cases (20%) had multiple site involvement [lung, pneumomediastinum, and subcutaneous emphysema]. Among the 20 patients, 7 patients (35%) survived while 13 died (65%). The highest mortality was observed in patients with left-sided pneumothorax (100%) while isolated pneumomediastinum had the best outcome, where out of 5 patients 4 survived. The pneumomediastinum cases were managed conservatively. All 7 cases of isolated pneumothorax required intercostal drainage (ICD). The patients who had multiple site involvement also required ICD. All the cases of multiple site involvement air leak required ventilatory support (2 needed non-invasive ventilation while the other 2 needed invasive ventilation). Conclusion: In our study, we found air leak syndrome as an important predictor of increased morbidity and mortality. It also poses a challenge for the management of hypoxia and ventilation in the already compromised lungs.
Prone positioning also has the potential to independently cause macroglossia. Awareness of this complication of proning could help mitigate morbidity in patients. **Case report:** A 53-year-old diabetic, hypertensive overweight female with OSA presented with progressive shortness of breath and productive cough. She was mechanically ventilated in ICU in view of respiratory distress secondary to COVID-19 pneumonia. Intubation was minimally traumatic with minimal oral bleeding settling over few minutes. Though managed with medications as per COVID-19 management protocol, she progressed to severe ARDS hence proned on hospital day 1 for 16 hours – PaO2/FiO2 ratio improved. She was not proneed further. Acute macroglossia (3 inches outside the oral cavity) with lower facial edema was noted 4 days post proning. Saline moistened gauze was loosely wrapped around the tongue every hour. Circumferential ecchymosis was noticed around her neck on the 6th day. On day 8, macroglossia did not show signs of resolution. Hence, the tongue was pushed in manually every 2 hourly and the position was maintained manually for 10 minutes. The swelling decreased gradually with the tongue staying in a retracted position on treatment day 2. On day 3, there was a complete resolution of the swelling. However, she had persistent swallowing difficulty causing difficulty in weaning from tracheostomy. MRI of neck and chest showed large pre-vertebral collection from the upper border of C2 inferiorly across the thoracic inlet to the posterior mediastinum with thin linear extension up to the lower border of T4. Mass effect with airway compression, displacement, and compression of esophagus and neck vessels was seen. Trans-oral exploration revealed mucosal rent and bulge in the posterior pharyngeal wall. The hemotoma was evacuated by ENT specialists. She was discharged on tracheostomy and feeding tube. Tracheostomy decannulation was done after 1 month. **Discussion:** In our practice of proning patients with ARDS for >10 years, this is the first case of macroglossia as a complication of proning that we encountered. Other factors that could have contributed to this patient are obesity and mildly traumatic intubation. Development of macroglossia 4 days after proning and resolution over a short period of time is rare and suggests lymphatic and vascular compression as the cause. Later development of ecchymosis and dysphagia may be due to the posterior pharyngeal injury. **Conclusion:** Proning, especially in obese patients, can be a challenge. Positioning of the face and avoidance of injury to any of the structures is vital to the care of the prone patient. Medical staff involved in patient care should be aware and vigilant to pick up this condition early to avoid further injury.

110. Evaluation of Quality of Life in Survivors of Critical Illness and Challenges in Running a Post ICU Clinic in India (Conference Abstract ID: ABS0110)

**K Gowtham, Ajay Padmanaban, Gerard Joseph Gonsalvez, N Ramakrishnan, Babu K Abraham**

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**DOI:** 10.5005/jp-journals-10071-23712A.110

**Introduction:** Post intensive care syndrome (PICS) is defined as a new or worsening impairment in physical, cognitive, or mental health status arising after critical illness and persisting beyond discharge from the critical care setting. The data regarding the incidence of PICS and the quality of life of survivors of critical illness in India are lacking. **Aims and objectives:** To determine the incidence of PICS by evaluating the quality of life among survivors of critical illness by following them up in a post ICU clinic after discharge from the hospital. We also seek to identify the challenges of establishing and running post ICU follow-up clinics in India. **Materials and methods:** This study is being conducted in a single centre Multidisciplinary Critical Care unit of Apollo Hospital, Chennai. This is a prospective observational study including patients above 18 years admitted in ICU with severe illness defined as receiving mechanical ventilation and/or vasopressor infusions for >48 hours. The patients are being followed up at 15 days, 1 month, and 3 months after hospital discharge, in person or over a telephonic conversation with either the patient or the caretaker using questionnaires for health-related quality of life scales such as EQ-5D-5L and WHO Disability Assessment Scale. **Measurements and results:** This is an ongoing study for which the recruitment has just been completed. 47 patients have completed 3-month follow-up till date. Interim analysis revealed that 85.09%, 42.54%, and 14.88% experienced moderate to severe problems in mobility at 15 days, 1 month, and 3 months, respectively. With respect to self-care 74.45%, 38.29%, and 12.75% of patients experienced moderate to severe problems at 15 days, 1 month, and 3 months. At 15 days, 74.45% of patients experienced moderate to severe problems in performing activities of daily living and 44.66% and 17.01% of patients had similar problems at 1 month and 3 months. Approximately 14% of the patients experienced anxiety or depression about their illness even after 90 days. The median score with IQR on a numerical rating scale provided in EQ-5D-5L to mark their health on that day of questionnaire administration was 90 (80–100) after 90 days of hospital discharge. These scores were 65 (55–75) and 80 (70–85) at 15 days and 1 month follow up. 4 patients got readmitted within 15 days of hospital discharge either to the same unit or in a different unit. 9 patients were declared dead within the 1 month period either at home or in an institution. Patients did not turn up for follow up clinic amidst the pandemic and there were challenges in persuading patients to answer the questionnaire even via telephone. **Conclusion:** The data on the quality of life of Indian patients after ICU discharge is still lacking. This research indicates a reduction in the quality of life of patients in the period immediately after ICU discharge and does not return to normal in most patients even after 90 days of hospital discharge and persuading the patients to follow up in the post ICU clinic is arduous.


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**DOI:** 10.5005/jp-journals-10071-23712A.111

**Aim and background:** The prevalence of acute kidney injury (AKI) among COVID-19 patients admitted to ICU was 46%. There is a paucity of data on renal recovery in a cohort of patients with AKI. Since COVID-19 is considered a public health issue, the estimates for >10 years, this is the first case of macroglossia as a complication of proning that we encountered. Other factors that could have contributed to this patient are obesity and mildly traumatic intubation. Development of macroglossia 4 days after proning and resolution over a short period of time is rare and suggests lymphatic and vascular compression as the cause. Later development of ecchymosis and dysphagia may be due to the posterior pharyngeal injury. **Conclusion:** Proning, especially in obese patients, can be a challenge. Positioning of the face and avoidance of injury to any of the structures is vital to the care of the prone patient. Medical staff involved in patient care should be aware and vigilant to pick up this condition early to avoid further injury.

110. Evaluation of Quality of Life in Survivors of Critical Illness and Challenges in Running a Post ICU Clinic in India (Conference Abstract ID: ABS0110)

**K Gowtham, Ajay Padmanaban, Gerard Joseph Gonsalvez, N Ramakrishnan, Babu K Abraham**

Apollo Hospital, Chennai, Tamil Nadu, India, Phone: +91 8113857581, e-mail: drgowtham07@gmail.com

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**Introduction:** Post intensive care syndrome (PICS) is defined as a new or worsening impairment in physical, cognitive, or mental health status arising after critical illness and persisting beyond discharge from the critical care setting. The data regarding the incidence of PICS and the quality of life of survivors of critical illness in India are lacking. **Aims and objectives:** To determine the incidence of PICS by evaluating the quality of life among survivors of critical illness by following them up in a post ICU clinic after discharge from the hospital. We also seek to identify the challenges of establishing and running post ICU follow-up clinics in India. **Materials and methods:** This study is being conducted in a single centre Multidisciplinary Critical Care unit of Apollo Hospital, Chennai. This is a prospective observational study including patients above 18 years admitted in ICU with severe illness defined as receiving mechanical ventilation and/or vasopressor infusions for >48 hours. The patients are being followed up at 15 days, 1 month, and 3 months after hospital discharge, in person or over a telephonic conversation with either the patient or the caretaker using questionnaires for health-related quality of life scales such as EQ-5D-5L and WHO Disability Assessment Scale. Data on Sleep disturbances are assessed using Insomnia Severity Index. **Measurements and results:** This is an ongoing study for which the recruitment has just been completed. 47 patients have completed 3-month follow-up till date. Interim analysis revealed that 85.09%, 42.54%, and 14.88% experienced moderate to severe problems in mobility at 15 days, 1 month, and 3 months, respectively. With respect to self-care 74.45%, 38.29%, and 12.75% of patients experienced moderate to severe problems at 15 days, 1 month, and 3 months. At 15 days, 74.45% of patients experienced moderate to severe problems in performing activities of daily living and 44.66% and 17.01% of patients had similar problems at 1 month and 3 months. Approximately 14% of the patients experienced anxiety or depression about their illness even after 90 days. The median score with IQR on a numerical rating scale provided in EQ-5D-5L to mark their health on that day of questionnaire administration was 90 (80–100) after 90 days of hospital discharge. These scores were 65 (55–75) and 80 (70–85) at 15 days and 1 month follow up. 4 patients got readmitted within 15 days of hospital discharge either to the same unit or in a different unit. 9 patients were declared dead within the 1 month period either at home or in an institution. Patients did not turn up for follow up clinic amidst the pandemic and there were challenges in persuading patients to answer the questionnaire even via telephone. **Conclusion:** The data on the quality of life of Indian patients after ICU discharge is still lacking. This research indicates a reduction in the quality of life of patients in the period immediately after ICU discharge and does not return to normal in most patients even after 90 days of hospital discharge and persuading the patients to follow up in the post ICU clinic is arduous.
criteria (AIC and BIC models) were applied and a model with the lowest AIC or BIC was considered as the best fit to predict non-recovery from AKI.

Results: 200 patients’ data were analysed, of which 67 patients recovered from AKI. Of the 67 patients, 16, 9, and 10 patients had transient AKI (<48 hours), persistent AKI (2–7 days), and AKD (7–90 days), respectively. Dialysis was required for 136 patients. The average duration for recovery from AKI was 7.4 days. The best fit model with the lowest BIC that predicted non-recovery from AKI were: the combination of APACHE II, day onset of AKI, and magnitude of AKI. Results of logistic regression showed admission APACHE II, day onset of AKI, and magnitude of AKI were statistically significant in predicting non-recovery from AKI [OR 1.1 (p < 0.001; 95% CI 1.06–1.16), OR 1.6 (p = 0.001; 1.24–2.24), and OR 2.9 (p < 0.001; 2.03–4.36), respectively]. This model had sufficient discrimination with AUC 0.86 and was well calibrated dependent on dialysis at hospital discharge, and mortality among COVID-AKI patients. Materials and methods: A single-centre, observational study was conducted in a mixed adult ICU from March 1, 2020, to February 1, 2021. COVID-19 patients who presented with or developed AKI as per KDIGO criteria within 7 days of ICU admission were included. Baseline characteristics, hemodynamic parameters, and renal recovery kinetics were captured till the discharge of the patient. Patients were followed up till 90 days post-discharge. Logistic regression with best subset selection was performed with renal recovery as an outcome (recovery is defined as attaining AKI stage 0 by KDIGO definition or 33% reduction of serum creatine from baseline) and APACHE II, rapidity of onset and progression of AKI, the magnitude of AKI, inflammatory markers, comorbidities, and P/F ratios as predictor variables. There were no multicollinearities, influential observations. Penalized-likelihood

<table>
<thead>
<tr>
<th>Variable</th>
<th>AKI Recovery, n = 67</th>
<th>AKI Non-recovery, n = 133</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean (se)</td>
<td>58.41 (1.6)</td>
<td>59.47 (1.2)</td>
<td>0.61</td>
</tr>
<tr>
<td>Male, n (%)</td>
<td>48 (71)</td>
<td>92 (69)</td>
<td>0.72</td>
</tr>
<tr>
<td>APACHE</td>
<td>20 (0.9)</td>
<td>28 (0.7)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Inotrope days, mean (se)</td>
<td>3.4 (0.5)</td>
<td>4.3 (0.3)</td>
<td>0.12</td>
</tr>
<tr>
<td>Infections</td>
<td>36 (54)</td>
<td>58 (44)</td>
<td>0.17</td>
</tr>
<tr>
<td>CVS Outcomes (ASC/CVA/TIA/Arrhythmia/PVD/PTE)</td>
<td>13 (19)</td>
<td>38 (28)</td>
<td>0.16</td>
</tr>
<tr>
<td>BMI</td>
<td>23.3 (0.3)</td>
<td>22.4 (0.2)</td>
<td>0.01</td>
</tr>
<tr>
<td>DM</td>
<td>44 (65)</td>
<td>92 (69)</td>
<td>0.61</td>
</tr>
<tr>
<td>CKD (Stage 1–4)</td>
<td>6 (0.1)</td>
<td>19 (14)</td>
<td>0.36</td>
</tr>
<tr>
<td>Prior medication (ACE/ARB)</td>
<td>11 (16)</td>
<td>14 (10)</td>
<td>0.26</td>
</tr>
<tr>
<td>Cardiac arrest</td>
<td>0 (0)</td>
<td>11 (8)</td>
<td>0.02</td>
</tr>
<tr>
<td>ACS/MI</td>
<td>7 (10)</td>
<td>19 (14)</td>
<td>0.51</td>
</tr>
<tr>
<td>Hypotension</td>
<td>12 (18)</td>
<td>43 (32)</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Baseline

- Hb: 12.2 (0.3) vs 12.1 (0.2) (p = 0.87)
- TLC: 15917 vs 17544 (p = 0.37)
- Procalcitonin: 0.6 [0.1–2.1] vs 1.6 [0.4–8.1] (p = 0.03)
- CRP: 18.5 (1.5) vs 16.3 (1.1) (p = 0.22)
- D-dimer: 935 [627–1274] vs 1009 [667–1537] (p = 0.35)

Proteinuria

- 0: 4 vs 10 (p = 0.08)
- 1: 20 vs 27
- 2: 9 vs 36
- 3: 4 vs 16

Onset AKI in days, mean (se) 0.4 (0.1) vs 1.5 (0.2) (p = 0.003)

Maximum stage of AKI

- Stage I: 25 vs 4 (p < 0.001)
- Stage II: 12 vs 5
- Stage III: 5 vs 13
- RRT: 25 vs 111

Death, n (%): 38 (57) vs 131 (98) (p < 0.001)
**Table 2: Characterization of renal recovery among COVID AKI patients.**

<table>
<thead>
<tr>
<th>AKI recovery, n</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AKI</td>
<td></td>
</tr>
<tr>
<td>Transient (&lt;48 hours)</td>
<td>16</td>
</tr>
<tr>
<td>Persistent (2–7 days)</td>
<td>9</td>
</tr>
<tr>
<td>AKD (7–90 days)</td>
<td>10</td>
</tr>
<tr>
<td>Patients recovered from AKI at ICU discharge, n (%)</td>
<td>41 (61)</td>
</tr>
</tbody>
</table>

**Stage of recovery of AKI at hospital discharge**

| Stage 0 [A, B, C] | 33 |
| Stage I          | 4  |
| Stage II         | 1  |
| Stage III        | 3  |

**Days to recover from AKI, mean (se)**

| Days to recover from AKI, mean (se) | 7.4 (1.4) |
| Death, n (%)                       | 38 (57)   |

**Fig. 1: Area under the receiver operating curve for the combination of APACHE II, the onset of AKI, and magnitude of AKI. AUROC = 0.86**

[Hosmer–Lemeshow (HL) chi², p = 0.06]. Overall mortality among COVID-AKI patients was 84%. Two patients were dependent on dialysis at hospital discharge. Upon follow-up of 31 survivors for 90 days, four deaths were recorded. **Conclusion:** In our study, a higher APACHE II score at admission, the longer time interval between admission to the onset of AKI and the higher magnitude of AKI during ICU stay predicted poor renal recovery. A significant proportion of our patients require dialysis support and this poses a challenge on hospital resources and financial burden to the family. We observed higher mortality among COVID-19 patients with AKI compared to those with AKI not associated with COVID-19.

**112. Life-threatening Acute Kidney Injury due to Enalapril in a Young Infant: A Case Report**

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DOI: 10.5005/jp-journals-10071-23712A.112

**Aim and background:** Angiotensin-converting enzyme inhibitors (ACEIs) are widely used in children with congestive heart failure (CHF), along with diuretics. Though ACIs are well-tolerated, few reports of acute kidney injury (AKI) are reported in neonates, reversible with discontinuation of the drug and rarely required dialysis. **Objective:** A case report of an infant with multiple left to right shunts on enalapril and furosemide who developed AKI stage III. **Materials and methods:** A case report of an infant admitted in a tertiary care centre with CHF secondary to a cyanotic congenital heart disease developed drug-induced acute kidney injury. **Results:** A 16-day-old neonate presented with respiratory distress since day 3 of life. Till day 15 of their life, he was managed in a local hospital with frusemide and sildenafil. Clinical examination in the emergency room at our hospital, on day 16 of life, revealed features of CHF (heart rate 145/minute, respiratory rate 62/minute, chest retractions, bilateral crepitations, and hepatomegaly). He had a pan-systolic murmur (grade 3/6) over the lower left sternal border. Fluid restriction and oral furosemide (2 mg/kg/day) were initiated. 2D-echocardiography revealed two ostium secundum-atrial septum defects measuring 3 mm and 2.5 mm, a large subaortic ventricular septal defect, patent ductus arteriosus (PDA) of 3 mm, severe pulmonary hypertension. Due to worsening congestive symptoms, on day 34, oral furosemide was hiked to 5 mg/kg/day, and enalapril was also added. Blood urea and serum creatinine were normal before initiation of enalapril. On day 40, child had loose stools and decreased urine output that progressed to anuria, azotemia (blood urea, 103 mg/dL; serum creatinine, 3.4 mg/dL), hyperkalemia (7.1 mEq/L), and hyponatremia (126 mEq/L). Enalapril and diuretic were withdrawn immediately. The child underwent peritoneal dialysis (PD) for 4 days. On day 53, he underwent corrected cardiac surgery. Postoperatively, he received enalapril, furosemide, and digoxin. One month after, he was doing well. **Conclusion:** ACEI should be cautiously used in infants, particularly with conditions predisposed to dehydration and co-administered with other nephrotoxic drugs. Meticulous monitoring, immediate withdrawal of offending medications, and timely initiation of peritoneal dialysis can avoid fatality.

**113. Emamectin Benzoate Poisoning Causing Multi Organ Failure**

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DOI: 10.5005/jp-journals-10071-23712A.113

**Aim and background:** Emamectin is a foliar insecticide derivative of abamectin, which is isolated from the fermentation of Streptomyces avermitilis, a naturally occurring soil actinomycete. It acts by stimulating the release of γ-aminobutyric acid, an inhibitory neurotransmitter, thus causing insect paralysis within hours of ingestion, and subsequent insect death 2–4 days later. In humans, there is a paucity of information regarding human toxicity associated with EB. **Objective:** Alcohol intake along with emamectin benzoate compound can worsen outcomes. **Materials and methods:** This case series is about two patients, one is a 52-year-old male who consumed 50 g of Amnon insecticide (5% emamectin benzoate) poison under influence of alcohol, another is a 22-year-old female who consumed around 200 g of 5% emamectin benzoate. In our first case, the patient developed severe symptoms from acute respiratory failure to MODS. While in the second case,
the patient had no significant presentation, was discharged, and did not experience any sequelae. Results: A 52-year-old male patient developed multiorgan dysfunction within 2 days of ingestion, was kept on a mechanical ventilator for 8 days, and received 9 haemodialysis during his course of stay. The patient was discharged 1 month after admission without any sequelae. While a 22-year-old female patient did not have any complications and was discharged after 4 days of admission without any sequelae. In cases of high dose avermectin ingestion in humans, CNS toxicity, including agitation and depressed mental status, has been reported, as well as death resulting from respiratory failure. With respect to human EB toxicity, there are very few documented cases, one where the patient presented with mild confusion and gastrointestinal (GI) symptoms of nausea, vomiting, and cramping discomfort. He was discharged 1 week from the initial presentation and experienced no sequelae. In another documented case, the patient ingested 100 mL of 2.15% EB without dilution under the effect of alcohol. He also experienced GI symptoms but did not have any CNS depression. The metabolic acidosis rapidly worsened, and could not be corrected, even with intensive therapy. Conclusion: The toxic effects of emamectin benzoate were more pronounced when it was consumed along with alcohol. Further studies are needed to know the effect of emamectin benzoate on humans.

115. Central Pontine and Extrapontine Myelinolysis: The Osmotic Demyelination Syndromes in Intensive Care Unit (Conference Abstract ID: AB50115)

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Aim and background: The osmotic demyelination syndrome (ODS) has been identified as a complication of the rapid correction of hyponatremia. In recent years, a variety of other medical conditions have been associated with the development of ODS, independent of changes in serum sodium which cause rapid changes in osmolality of the interstitial compartment of the brain leading to dehydration of energy-depleted cells with subsequent axonal damage that occurs in characteristic areas. Slow correction of the serum sodium concentration and additional administration of corticosteroids seems to be a major preventive step in ODS patients. Objective: To prevent the incidence of ODS during correction of hyponatremia methods: A 63-year-old male was admitted with a history of vomiting and altered sensorium to a private clinic. He was a chronic alcoholic and hypertensive on irregular medications. His blood reports were suggestive of severe hyponatremia (Na 106) which was managed with intravenous fluids and hypertonic saline infusion over 1 day and discharged. After 2 days, he developed a high-grade fever of 106F, altered mental status with GCS E1V1M1, and severe breathlessness. He was referred to our emergency department for further management. He was hypotensive with a BP of 80/50 mm Hg with sinus tachycardia with a pulse rate of 156 bpm and tachypnea with RR of 40 per min. Clearly, his airway, breathing, and circulation were compromised. He was intubated and was initiated with volume control mode along with 1 L of a fluid bolus. POCUS did not reveal cardiorespiratory abnormality and his ONSD was 5 mm. The pupils were normal for light and accommodation reflex and the Babinski’s sign was negative. His qSOFA score was 3 and a working diagnosis of sepsis or unknown poisoning with raised ICP was kept. Results: Initial investigations were suggestive of severe hyponatremia and hyperchloremia with normal profiles for hemogram, liver and kidney function tests, and procalcitonin. The patient was managed with slow correction of hyponatremia and lung-protective mechanical ventilation strategy and hypoposmolar nutritional support. A percutaneous tracheostomy was performed within the first week and he was discharged to a rehabilitation centre after 2 weeks of stay. He was fully conscious at the time of discharge with spontaneous breathing on T piece with 3–4 L/minute O2 requirement. During his stay, his MRI brain was suggestive of T2 hyperintensities in the midbrain, pons, and middle cerebellar peduncles with no restriction of diffusion on ADC imaging. It is important to understand the need to keep a high suspicion for ODS in similar situations else it can be easily missed. Other manifestations of ODS include confusion, quadriplegia, and pseudobulbar palsy. It is advisable to correct chronic hyponatremia in high-risk patients with 4–6 mmol/L over 24 hours with an advised maximum of 8 mmol/L to prevent ODS. Plasmapheresis is a newer modality for treating ODS. Conclusion: It is imperative to be extra cautious to not overzealous fluid administration, especially hyperosmolar fluids in critically ill patients. Fluid orders should be kept as meticulously as prescription of antibiotics. The clinical manifestations, various associated syndromes, fluid therapy and treatment protocols for acute vs chronic hyponatremia will be discussed in the final presentation.

116. Multisystem Inflammatory Syndrome in a Young Adult During the Second Wave of COVID-19 Pandemic in India (Conference Abstract ID: AB50116)

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Aim and background: Since June 2020, there have been several reports of multisystem inflammatory syndrome in adults (MIS-A). There is a paucity of a description of MIS-A from India. Materials and methods: A 26-year-old, healthy male, with a previous history of COVID-19, without any known history of chronic disease, with clinical characteristics resembling MIS-A was hospitalised on May 30, 2021. Results: Case presentation: The patient presented with 1 week of persistent high-grade fever (102-degree F) with chills and rigor. The concomitant complaints were left-sided pain in the buccal cavity, left facial swelling, intra-orbital pain, and watery eyes. The respiratory rate was 24/minute, SpO2 was 96% on room air. Ever since the recovery from COVID-19 (1 week back), there was severe pain in the throat with difficulty in breathing, generalised weakness, and loss of appetite. BP was 130/80 mm Hg. The hospital course was notable for profound systemic inflammation, requiring ICU admission. MRI revealed discrete subcentimetric bilateral deep cervical lymph nodes. Blood tests at admission revealed, lymphopenia 15.3%, CRP 61.84 mg/L, total leucocyte count 12.93 (1000/µL), neutrophils 78.7%. Red distribution width (RDW) was marginally elevated to 15%. The patient was managed by IV fluids, IV immunoglobulin. Scrub typhus was excluded by IgM ELISA IgM with a negative titre (0.095). Widal test was negative and excluded enteric fever. d-dimer was within normal limits (125 ng/mL). Borderline elevation of hepatic enzymes was noted. There
was a high SARS-CoV-2 IgII titres (12050.4). The patient improved following intravenous immunoglobulin (IVIG), IV ascorbic acid, dexamethasone, supportive care and was discharged on day 4, with methylprednisolone for 1 week. **Conclusion:** Specific treatment is yet to be determined. However, dexamethasone and IVIG allowed controlling the inflammatory process. MIS-A, as a delayed immune complication, requires early recognition, with a multidisciplinary approach and aggressive therapeutic intervention, to yield favourable outcomes. MIS-A should be considered in adults, during the recovery phase from COVID-19. This is perhaps, the first description of MIS-A from India during the second wave of the COVID-19 pandemic. The role of IVIG needs further exploration.

### 117. Acute Mesenteric Ischaemia: Early Diagnosis and Treatment

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**Introduction:** Acute mesenteric ischaemia is a life-threatening vascular emergency leading to significant mortality if not recognised promptly. Due to the discordance between the severity of clinical symptoms and findings diagnosis is delayed. If the bowel ischaemia is identified before it progresses to necrosis endovascular revascularisation techniques or surgical intervention can be undertaken and ensuing multi-organ dysfunction can be prevented and reduced. We report a series of two cases where early diagnosis and treatment resulted in the survival of these patients.

**Case description:** Case 1: A 52-year-old male with no known comorbidities presented to us with severe abdominal pain associated with vomiting and distention. Clinical findings were unremarkable with only vague epigastric tenderness and elevated serum lactates. CT abdominal angiography revealed 80–90% occlusion of the superior mesenteric artery with gangrenous changes involving distal jejunum and proximal ileum. Mechanical suction thrombectomy was done along with balloon angioplasty of the ileocolic branch. Exploratory laparotomy for resection and anastomosis of the gangrenous bowel segments was undertaken and he had an uneventful post-operative course. Work up for underlying predisposing conditions revealed the presence of lupus anticoagulant antibodies for which he was started on long-term anticoagulants. Case 2: A 56-year-old male, hypertensive with chronic DVT and underlying Factor V Leiden mutation, presented with pain abdomen and distention. The patient was haemodynamically unstable with a distended abdomen and absent bowel sounds. CT abdominal angiography was suggestive of superior mesenteric vein + portal venous thrombosis with ischaemic changes in mid jejunal loops. The patient was posted for emergency laparotomy for resection – anastomosis of the gangrenous segments wherein open vascular clot extraction from the jejunal branches of the mesenteric vein was done. On the 5th postoperative day in the ICU patient developed features of generalised peritonitis and was taken up for a re-exploration wherein a peritoneal lavage and anastomotic site repair was done. The patient had an uneventful subsequent postoperative course.

**Discussion:** An arterial or venous source of thromboembolism could be the cause for mesenteric ischaemia with a portion of them occurring due to non-occlusive vasoconstriction due to low splanchic flow. Careful history taking is needed not only for diagnosis but also to differentiate an acute from a chronic episode. Our patients presented acutely and did not have any history of weight loss or chronic postprandial pain abdomen. Lack of specific tests and unremarkable clinical findings can lead to delayed diagnosis. Although our patients had a delayed presentation with already infarcted bowel diagnosis was achieved promptly and with appropriate medical treatment and endovascular revascularization techniques, mortality was prevented. Following reperfusion second step is the resection of the gangrenous bowel but these surgeries can be morbid due to the extensive lengths of bowel required to be resected. Although our patients developed secondary peritonitis requiring re-exploration none of them developed short bowel syndrome. With prompt diagnosis and an integrated medical and surgical approach, significant mortality can be reduced although the postoperative complications, and morbidity can still be anticipated.

### 118. Stress Cardiomyopathy Post Liver Transplant: Case Report

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**Aim and background:** Stress-induced heart failure, also known as Broken Heart Syndrome or Takotsubo Syndrome, is a phenomenon characterized as rare. But well described in the literature, while stress-induced heart failure is often self-limited and resolves with medical support alone, mechanical ventricular support is occasionally necessary to avoid death, especially in the presence of cardiogenic shock. (1) As liver transplantation has become a more common procedure, new and unknown complications are presenting themselves. One such complication acutely decompensated heart failure, which affects approximately 3–7% of patients undergoing liver transplants in the postoperative period and results in a nearly increasing incidence found in the postoperative patient. Acutely decompensated heart failure, which affects approximately 3–7% of patients undergoing liver transplants and results in nearly 45% mortality. This case report describes the presentation of stress cardiomyopathy following liver transplant in the immediate postoperative period.

**Materials and methods:** Data were collected from a patient who was admitted with chronic liver disease who underwent a liver transplant and stress cardiomyopathy post-liver transplant. **Case presentation:** A 64-year-old gentleman was admitted to the hospital for deceased donor liver transplantation. The patient was a known case of a chronic liver disease diagnosed 3½ years back incidentally when he was evaluated for hernia surgery and the patient was on conservative management. The patient presented with a history of abdominal distension since 1 year, which has increased since 3 months, h/o generalized tiredness since 1 year, and reduced urine output since 3 months which improved with the use of a diuretic, tab spironolactone and tab torsemide, h/o breathlessness (NYHA GRADE 2) since 1 week. No history of fever, malena, haematemesis, abdominal pain, chest pain, cough, altered sensorium, alcoholism, smoking. No history of other co-morbid conditions like diabetes mellitus, hypertension, coronary artery disease, dyslipidemia, chronic obstructive pulmonary disease, thyroid disease, tuberculosis, seizure disorder or psychiatric illness, or drug abuse. No history of risk factors for ischemic heart disease. No past history of surgery. The patient was diagnosed with...
chronic liver parenchymal liver disease with portal hypertension, splenomegaly, hepatorenal syndrome with gross ascites. MELD Score of 34 and CHILD PUGH Score of 12. C. Patient underwent a liver transplant. After 8 hours of surgery, patient had a period of hypotension, tachycardia requirement of inotropes increased and period of desaturation and requirement of higher FiO2 levels to maintain PaO2 levels and SpO2 levels with preserved urine output and no metabolic acidosis. On further evaluation, electrocardiogram showed ST elevation in anterior leads (V1–V3), TROponin I levels at 0 hours 1.5 and 6 hours 3.38 2D ECHOCARDIOGRAPHY showed RWMA WITH EF 25%. The patient was managed conservatively with antiplatelets, anticoagulants, B blockers, and diuretics. The patient underwent a liver Doppler which showed a functioning liver graft. The patient underwent IABP insertion into the right femoral artery for haemodynamic support and to maintain coronary perfusion and medical management continued with B blocker, diuretics, antiplatelets, and anticoagulants with mechanical ventilation and inotropic support. On POD 3 patient underwent pigtail insertion into the right thorax for right pleural effusion drainage. Patient urine output reduced but managed conservatively. On POD 3 patient was extubated and was on intermittent NIV, inotropic support was tapered and stopped. On POD 4 IABP was removed. Repeat 2DECHO showed persistent severe LV dysfunction with improvement in RV FUNCTION and PAH. The patient was symptomatically better, maintaining oxygenation in room air, and was haemodynamically stable patient was shifted to ward on POD 7. The patient was managed conservatively in a ward with immunosuppressants and antiplatelets. Liver function remained within normal limits, rest of his hospital stay was uneventful. Later the patient was discharged on POD 30. Results: Patient diagnosed with stress cardiomyopathy – post liver transplant and managed accordingly and other causes of cardiac failure were ruled out. The patient was requiring inotropes and IABP. Conclusion: Our patient had takotsubo cardiomyopathy/stress cardiomyopathy associated with coronary artery disease with coronary artery stenosis presenting post-operatively following liver transplant surgery. It is some of the rare cases we have come across. Early recognition and prompt management of the patient will reduce morbidity and mortality in a liver transplant patient, as this condition is reversible his cardiac dysfunction will be recovered. IABP was useful to buy some time till the patient becomes haemodynamically stable rest was managed conservatively.

119. Hemofiltration for a Positive IL6 Balance in Severe COVID-19 Pneumonia: A Single Centre Experience (Conference Abstract ID: ABS0119)

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Aim and background: A high interleukin-6 (IL-6) level in COVID-19 plays a major role in the pathophysiology and is considered a relevant parameter in predicting the most severe course of the disease. In COVID-19 extracorporeal blood, purification is proposed as adjuvant therapy and aims at controlling the dysregulation in the autoimmune system. It essentially reduces high levels of several mediators and by this controls the cytokine storm, rather than actively targeting individual pathways of inflammation. Positive IL-6 balance post polymethyl methacrylate (PMMA) filter used for cytokine storm in COVID-19 patients with dialysis has shown to be an independent predictor of mortality. We present outcomes of severe COVID pneumonia patients with cytokine storm, acute kidney injury, chronic kidney disease, sepsis, and septic shock at our centre over a year. Objective: A retrospective analysis of data to understand the effect of hemofiltration for severe COVID-19 pneumonia. Materials and methods: All patients admitted to our unit, with severe COVID pneumonia with chronic kidney disease, sepsis, septic shock, and cytokine storm were included from August to December 2020. Demographic variable, clinical, and laboratory data were compared pre and post filtration with PMMA filters. Dialysis vintage, duration of mechanical ventilation, length of stay, and hospital were analysed. Results: We analysed 17 severe COVID patients (P/F ratio < 100) requiring ventilator support in whom hemofiltration was used for cytokine storm with dialysis, sepsis, and septic shock. The average age of these patients was 70.2 ± 18.2 years with no difference in the distribution of age and comorbidities. They all were divided as responders or non-responders groups based on the decrease or no change and increase, respectively, in their pre and post filtration levels of IL-6. Non-responders (N = 11) had 3.6-fold increase in IL-6 levels post hemofiltration with the majority of them on vasopressors; pre (8/11–72.7%) and post (9/11–81.8%) hemofiltration. None of the non-responders survived and we noted 54.5% of this group received hemofiltration post intubation. The non-responders also had a positive IL-6 balance post-hemofiltration which guided us to use this therapy early in the disease. Therefore, subsequent 6 patients were offered hemofiltration early, where we found a decrease in IL-6 levels by 21.4%. Out of the 6 responders, 4 survived and demonstrated a reduction in the IL-6 of 66.7%. None of these survivors required vasopressor support and we were able to avoid or reduce the need for ventilator support in them. Survivors had an average length of stay in ICU of 24 days and were discharged by the 30th day. One of the two non-survivors had succumbed secondary to a cardiac event, while the other was intubated before filtration in view of heart failure. Conclusion: The most prominent finding was the distinct increase in the IL-6 levels in non-survivors which was directed towards the early use of hemofiltration treatment. The present data though limited to a small subgroup of severe COVID patients suggest the need to prevent the positive IL-6 balance. Hemofiltration may be an alternative to be considered early in to prevent the cytokine storm and its ill effects.

121. Intrathoracic Large Airway Compression Due to Patent Ductus Arteriosus: A Clinical Oddity (Conference Abstract ID: ABS0121)

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Introduction: Patent ductus arteriosus (PDA) is one of the common forms of congenital heart disease (CHD) accounting for 5–10% of all cases of CHD. Persistent PDA can have several short-term and long-term complications including congestive cardiac failure, recurrent lower respiratory tract infections, pulmonary vascular hypertension, and infective endocarditis. Atelectasis and complete lung collapse are unusual complications of large and persistent PDA. Case details: A 6-month-old female presented with intermittent lung collapse are unusual complications of large and persistent PDA.
episodes of increased rates of breathing, cough, and intermittent cyanosis since 3 months of age. There was accompanied history of suck rest cycle and forehead sweating. The antenatal period was uneventful. The baby was born to a primigravida mother at 38 weeks of gestation with a birth weight of 2.15 kg. At presentation, the child had respiratory rates of 36/minute, heart rate of 152/minute, oxygen saturation of 88% on room air, blood pressure between 50th and 90th centile. She was put on a high-flow nasal cannula in view of respiratory failure. Physical examination showed intercostal retractions with nasal flaring, decreased air entry on the left half of chest, bilateral crepitations, ejection systolic murmur prominent over the left sternal border and loud P2. The clinical possibility of CHD with congestive cardiac failure was considered. 2D-echocardiography evaluation revealed PDA (4.5 mm) with bidirectional shunt with severe pulmonary artery hypertension (PAH) with tricuspid regurgitation with a dilated right atrium and right ventricle. For PAH, she was initiated on oral sildenafil. Initial X-ray chest showed overinflated left lung with consolidation over the right side. Initially, supportive care was given for the same. During the hospital course, the distress of the child got worsened. On examinations, retractions were increased and air entry was reduced over the left side. Repeat X-ray chest showed left-sided complete collapse. CT angiography is suggestive of PDA with dilated right pulmonary artery compressing over left main bronchus. So cause considered for the left lung collapse was external compression of the left bronchus by the pulmonary artery. Device closure of PDA was done under general anaesthesia and was put on ventilator support post-surgery for 2 days. Post PDA closure, 2D ECHO done showed normal cardiac function with a device in position. X-ray chest showed resolution of left-sided collapse. The child was extubated after 2 days and gradually was made off oxygen. The child was discharged on room air after 37 days of hospital stay. The child did well on follow-ups also.

**Conclusion:** Intrathoracic airway compression is an unusual and reversible complication of large and persistent PDA.

122. Critical Care Management in Blunt Chest Trauma: A Rational Individualised Management Protocol (Conference Abstract ID: AB50122)

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**Introduction:** Blunt chest trauma is the second most leading cause of death after head injury in road traffic accidents. Common injuries include rib fractures, flank chest, pneumothorax, hemothorax, and lung contusion. Injury to lung parenchyma leads to accumulation of blood and fluid causing alveolar oedema and disruption of normal lung structure and function. Patients may present initially with minimal respiratory insufficiency while 50–60% of these patients may develop acute respiratory distress syndrome (ARDS) requiring mechanical ventilation and this increases the mortality in such cases. **Objective:** The objective of our study was to devise a management protocol to aid in the individualized management of traumatic blunt chest trauma. **Materials and methods:** A retrospective cohort analysis of all traumatic chest injuries treated at Ganga Hospital Coimbatore from January 1, 2020, to July 31, 2021, were done with respect to demographic data, injury severity score (ISS), and radiographic evidence of rib fractures, traumatic lung pathology as evidenced on tomography. The VAS scores, level of hypoxemia, need for oxygen or ventilatory support, duration of ventilation, length of stay in ICU, length of stay in hospital, and mortality rates were assessed among the 352 patients treated at our hospital in the said duration with traumatic blunt trauma chest and a rational management protocol was devised to help guide individualized traumatic critical care management of blunt chest trauma. **Results:** Of the 352 patients treated for blunt trauma chest at our institute during the study period, 162 patients required admission to intensive care. Demographics revealed 85.1% (138) were males and 14.8% (24) were females, age ranged from 13 to 80 years (mean 47.4 years). 18.5% (30) patients had isolated chest injury and the rest 81.4% (132) had other associated injuries. The common modes of injuries were RTA and fall from height. 68.5% (111) patients sustained unilateral and 20.3% (33) bilateral chest injury. The lung injuries sustained includes pneumothorax (54.3%), haemothorax (58.6%), contusions (18.5%), subcutaneous emphysema (16%), atelectasis (14.8%), collapse-consolidation (13.5%), lacerations (0.01%), and flail chest (0.03%). A chest drain was inserted in 95 (58.6%) patients. All patients admitted to ICU with chest injuries are aggressively managed with pulmonary toileting, early adequate analgesia with opioids, regional block or thoracic epidural, and early non-invasive ventilatory support. 28.3% (46) patients only required respiratory support in the form of oxygen via either nasal prongs or facemask. The rest 61 (37.6%) patients required NIV support and 52 patients (32%) required invasive mechanical ventilation. Out of the patients intubated, 16 went on to require tracheostomy. In the intubated group, 20 patients were intubated due to chest injury and the rest were required as a result of other associated injuries or for postoperative ventilation. All patients admitted to ICU required analgesia with intravenous drugs (paracetamol, tramadol, and NSAIDs) and opioid infusion to maintain VAS score of <3. 20 patients received a thoracic epidural and 38 patients received regional block either paravertebral or erector spinae. Three patients in our group expired during the hospital stay. The average length of ICU stays and hospital stays were 4.8 days and 11.9 days, respectively. A rational management protocol was devised based on the above observations and critical care management undertaken for each patient. **Conclusion:** Traumatic chest injury is one of the major causes for admission to trauma intensive care. Age, the severity of underlying lung injury, injury severity score, and pain score influence the outcome. Early aggressive pain management, pulmonary toileting, and non-invasive ventilation improve the outcome. Our management protocol is a comprehensive guide in the individualized management of traumatic chest injury.

123. Role of Charcoal Hemoperfusion in Management of a Rare Case of Glufosinate Ammonium Poisoning (Conference Abstract ID: AB50123)

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**Aim and background:** Glufosinate, a glutamic acid analogue structurally, though primarily affects the excitatory neurons, its mechanism of action at the molecular and cellular level is largely unknown. The overall outcome is grave if consumed in undiluted form complications such as toxin reactions, hypotension, respiratory failure with apnea, loss of memory and consciousness, seizures
including death occurs in severe cases. This case report emphasizes the role of charcoal hemoperfusion in adsorbing and clearing lipophilic toxins like glufosinate ammonium, which eventually gets reflected in clinical outcomes. Also, this case report briefly describes the overall management principles of glufosinate ammonium toxicity. **Case report**: Glufosinate ammonium, a herbicide is toxic if consumed in undiluted form and acts by unknown mechanisms. A 61-year-old male presented to our hospital after consumption of 400 mL of 13.5% w/v of glufosinate ammonium compound with low GCS, which was attributed to hyperammonemia caused by the toxic compound. Aggressive antihyperammonemic measures were instituted as we know that hyperammonemia is independently associated with overall poor outcomes. The proposed mechanism of hyperammonemia secondary to glufosinate exposure is inhibition of glutamine synthetase in human cells. He underwent 2 cycles of 4 hours duration charcoal hemoperfusion session with 2 hours time interval in between. There was a serial decline in his serum ammonia levels which resulted in improvement in his sensorium and eventually got weaned off from the ventilator within 5 days of ICU stay. This case report also emphasizes the role of charcoal hemoperfusion in adsorbing and clearing lipophilic toxins like glufosinate ammonium, which eventually gets reflected in clinical outcomes. Also, this case report briefly describes the overall management principles of glufosinate ammonium toxicity.

**Conclusion**: Hemoperfusion is proposed to have therapeutic benefits as it adsorbs the surfactant and other lipophilic substances and in turn improves glufosinate ammonium clearance. Clinicians must be watchful for episodes of apnea with respiratory failure, altered mental status, seizures, and other systemic manifestations of glufosinate ammonium toxicity and respective supportive measures should be addressed.

124. Combination Therapy for Acute Management of Yellow Oleander Poisoning: Case Report (Conference Abstract ID: ABS0124)

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**Introduction**: Yellow oleander poisoning is a common method of suicide in developing countries in Southeast Asia. Toxicity after acute ingestion of cardiac glycoside-containing plants is similar to medicinal digitalis poisoning. Digoxin-specific antibodies (Fab) fragments bind to naturally occurring cardiac glycosides, including those found in plants, and reverses toxicity in human poisoning. It is recommended that patients who ingest cardiac glycoside-containing plants and develop life-threatening arrhythmias (e.g., atrioventricular node and/or severe sinus node block) or serum potassium >5.0 to 5.5 mEq/L receive digoxin-specific Fab fragments. **Materials and methods**: A 18-year-old male with no prior comorbidities presented to ED with an alleged history of deliberate self-harm by consuming 5–8 seeds of yellow oleander. He was found semi-conscious by family members and brought to ED within 3–4 hours of intake. On arrival, his vitals were BP 100/60 mm Hg, pulse 55 bpm, SpO₂ 97% on room air, and GCS of E2 V3M5. The ABG was s/o mild metabolic acidosis with severe hyperkalemia and the ECG was s/o third-degree heart block with reverse tick sign/Salvador Dali appearance (Fig. 1). We managed our patient with combination therapy with glucose, insulin, and bicarbonate in absence of the availability of Digifab. Insulin with dextrose infusion was used to decrease the serum potassium >5.5 mEq/L. Additionally, sodium bicarbonate 7.4% 50 mL intravenous boluses were given six hourly. The patient was continuously monitored for bradyarrhythmias and serum potassium levels.

**Discussion**: Vomiting, diarrhea, weakness, and confusion are typical presentations of this poisoning. Reversible inhibition of the Na⁺/K⁺ ATPase pump leads to hyperkalemia which, in acute ingestions, correlates with cardiac toxicity. Patients may develop bradycardia with AV block, atrial tachycardias, ventricular tachycardia including bidirectional ventricular tachycardia and ventricular fibrillation. **Conclusion**: T. peruviana poisoning is most prevalent in India and Southeast Asia where intentional ingestion of the seeds by suicidal adolescents and adults commonly occurs. Ingestion of 5–15 N. oleander leaves or 8–10 T. peruviana seeds can be fatal in an adult. Digoxin-specific Fab fragments are not always available for the treatment of serious poisoning. In resource-limited settings, we suggest the modified combination therapy for the treatment of serious cardiac glycoside poisoning. Severe atrioventricular block can be treated with atropine and, if not responsive to atropine,
cardiac pacing is an option. Ventricular tachycardia can be treated with low dose cardioversion (e.g., 0.25–0.5 J/kg) and ventricular fibrillation with low dose defibrillation (e.g., 2 J/kg, maximum dose 100 joules) in this poisoning. The final case presentation will focus on clinical symptomatology, toxidrome, treatment options, and disposition of oleander poisoning.

126. Role of Therapeutic Plasma Exchange in Massive Amlodipine Poisoning: A Rare Case Report (Conference Abstract ID: ABS0126)

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Aim and background: Therapeutic plasma exchange is frequently used to remove pathologic substances from a patient’s blood and it has been found useful in some cases of a drug overdose. Calcium channel blocker [CCB] overdose has been shown to be a cause of significant morbidity and can often times prove fatal. CCB causes hypotension by inhibiting cell membrane calcium channels, which leads to a slowing of cardiac electrical activity causing impairment of myocardial function and widespread vasodilation. Beta-blockers and CCBs have similar presentation and treatment overlaps and are often refractory to standard resuscitation measures. Case Report: We describe the case of a previously healthy 27-year-old man who ingested a massive dose of 60 tablets of 10 mg amlodipine along with 30 tablets of 15 mg bisoprolol. He presented to the hospital after 8 hours of consumption with persistent hypotension with BP of 70/50 mm Hg requiring 0.5 µg/kg/minute of noradrenaline and 0.4 µg/kg/minute of adrenaline support. He was started on calcium gluconate, High dose Insulin and Euglycemic Therapy (HET), and glucagon infusion. Due to non-improvement to usual supportive measures, he was started on lipid emulsion also. Despite all measures, there was worsening hypotension with increasing lactate levels and increased vasopressor requirement. For drug intoxication, plasma exchange can rapidly and effectively remove toxic substances and their potentially toxic metabolites from the blood compartment, especially those which have high protein binding. The potential benefit of therapeutic plasma exchange is being increasingly recognized, and its use is becoming more widespread, hence we decided to employ therapeutic plasma exchange in this patient. 2 sessions of plasma exchange were done removing 3.5 L of plasma each session with 24 hours interval between them. The patient’s vasopressor requirement reduced after the first plasma exchange and was eventually weaned off vasopressors after 12 hours of second plasma exchange. He was discharged to the ward on day 4 of the ICU stay. This case illustrates the need for the utilization of therapeutic plasma exchange in the emergency management of certain cases of severe amlodipine overdose. Conclusion: Therapeutic plasma exchange initiation resulted in a sustained improvement in the patient’s clinical status within a few hours of completing the procedure. Clinicians should consider the early employment of therapeutic plasma exchange in situations such as this.

129. Insight Into Anguish and Suffering of COVID-19 Patients: A Qualitative Analysis (Conference Abstract ID: ABS0129)

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Objective: To qualitatively analyze experiences and reflections of COVID-19 patients about their journey through illness and reflections about anguish and suffering. Materials and methods: Setting: The study was carried out at Shree Krishna Hospital, Karamsad – a government-designated COVID tertiary care center in central Gujarat during the second wave of COVID. Study design: A investigator-designed interview guide was prepared to capture experiences and reflections of patients suffering from/ those recently recovered from COVID-19 to capture responses to illness and experiences through the journey of illness. In-depth qualitative interviews were conducted and audio recorded. Participants’ selection: Eight patients who were of mild illness and 8 patients who were of moderate or severe illness (total 16), who fulfilled inclusion and exclusion criteria were selected by random, convenient sampling method. They were interviewed after their recovery from acute illness. The interview was recorded. Data analysis: To organize data, we used thematic analysis, coupled with a validated conceptual model of clinician-surrogate communication. Qualitative analysis of the audio recordings was carried out as per standard protocols. The steps of Collaizzi’s phenomenological data analysis were followed. Results: 1. Unprecedented illness, unplanned and abrupt hospitalization and inability to have access to the comforting presence of family members were identified as the most significant experiences reported by all patients. It was observed in patients of all severity and in both genders and at all ages. Patients also reported that their family members too were missing them during the illness like no other. 2. In the resulting situation, they looked for the needed emotional support from the treating physicians and healthcare team. 3. A number of themes emerged from the interviews. Inferring from a validated conceptual model, we finalized 2 domains for our coding: “inner strength” and “relationship building.” 4. In the domain of “inner strength”, we coded “To have the support of next of kin”, “The wish to go on living”, “seen by a doctor”, and “health care professionals’ positivity for him/her”. 5. In relationship building, we coded “emotional support”, “trust”, and “consensus” as the key elements. Patients reported that they wanted timely, accurate information about their condition and an interaction with a healthcare professional and their kin too. 6. The presence of family members was reported by all patients as the most crucial factor which could make them “strong from within” and facilitate overcoming the crisis of his/her own as well as enhance the comfort of their family. Conclusion: 1. Factors contributing to phenomenal suffering that COVID had
produced are: (i) unprecedented illness, unplanned and abrupt hospitalization, (ii) inaccessibility of comforting presence of family members. 2. Correspondingly, factors potentially capable of reducing the anguish and suffering were: (i) one's inner strength supplanted by communication with family, (ii) one's wish to go on living, (iii) to be seen and comforted by a doctor on time, and (iv) healthcare professionals’ positivity for him/her.

130. Role of Biomarkers in Sepsis in ICU: An Interim Analysis of Cross-sectional Study in a Tertiary Care Hospital (Conference Abstract ID: ABS0130)

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DOI: 10.5005/jp-journals-10071-23712A.130

Introduction: Sepsis is a common cause of morbidity and mortality with no gold standard diagnostic test for detecting sepsis. Blood cultures are a frequent diagnostic step but the results take at least 48 hours and timely recognition of infection and initiation of appropriate antibiotics remain crucial in the treatment of sepsis. Biomarkers thus come in handy for rapid diagnosis and risk stratification. Objectives: Primary objective: To assess the diagnostic and prognostic value of procalcitonin (PCT), interleukin-6 (IL-6), ferritin, and C-reactive protein (CRP) levels in differentiating between Gram-negative and Gram-positive sepsis patients. Secondary objective: To determine the relationship between serum PCT, IL-6, ferritin, and CRP levels and isolated sepsis pathogens. Materials and methods: We are conducting a cross-sectional study for a period of 2 years on 360 adult patients admitted in an intensive care unit (ICU) of a tertiary care hospital with sepsis or septic shock. Our exclusion criteria are patients with burns, suspected or documented non-bacterial infections, viral hepatitis, iron overload states, and active COVID-19 infection. We are using convenience sampling. Demographic details of patients are collected. Blood is drawn for estimation of the four aforementioned biomarkers as well as body fluids of the patient based on clinical suspicion are sent for microbiological evaluation on admission to ICU before administration of antibiotics. Based on the culture reports, patients are classified as culture-positive or culture-negative sepsis and the biomarkers in each group are analyzed for diagnostic and prognostic accuracy. The primary outcome of the study is the survival or death of the patient while the secondary outcome is the number of days of ICU stay. During the time of abstract submission, only 25 patients had been recruited and an interim analysis is being conducted. Results: During the time of abstract submission, only 25 patients had been recruited and an interim analysis is being conducted. The mean age of our patients was 57.16 years. The study population was predominantly males (20 subjects) with ten subjects of urosepsis, three with pancreatitis, two with pneumonia, and the remaining ten had a miscellaneous diagnosis. The mean values of the inflammatory markers were as follows: PCT = 16.672 (±24.3495), CRP = 85.8428 (±62.1224), IL-6 = 610.268 (±723.3846), and ferritin = 625.0832 (±628.5289). The p value of the biomarkers is <0.0001 and is significant at p < 0.05. The following combinations of biomarkers were found to be statistically significant – PCT with IL-6 (p = 0.00018), PCT with ferritin (p = 0.00012), CRP with IL-6 (p = 0.00116), and CRP with ferritin (p = 0.00079). The sensitivity of CRP and IL-6 was 100% while specificity was highest for PCT at 50%. Eight of the subjects had Gram-negative sepsis. The mean days of hospitalization were 19.92 days. Eight of the subjects died contributing to a mortality rate of 3.2 per 10 subjects. Conclusion: The combination of biomarkers reflects different aspects of sepsis pathophysiology and would be feasible to incorporate as a point of care testing. The biomarker panel that would provide diagnostic information for the investigation of a patient with suspected sepsis earlier than cultures is PCT with IL-6 and ferritin.

131. d-Dimer Levels to Predict in-Hospital Mortality in ICU Patients with COVID-19 (Conference Abstract ID: ABS0131)

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Aim and background: Coronavirus disease 2019 (COVID-19) is a recently described infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) causing various ICU admissions and deaths. Common laboratory values may provide key insights into patients with COVID-19, the illness caused by the SARS-CoV-2 virus, and may predict the morbidity and outcome. Objective: This study aimed to evaluate the effect of elevated d-dimer levels on mortality of patients admitted in ICU with COVID-19. Materials and methods: All ICU patients with laboratory-confirmed COVID-19 were retrospectively enrolled in Sevenstar Hospital, Nagpur from July 27, 2020, to October 30, 2020. d-dimer levels on admission, on day 3 and day 5 were collected in all ICU patients, and death events were collected. The subjects were divided into two groups discharged and expired. Then, the d-dimer levels between two groups were compared to assess the predictive value of d-dimer level and mortality in hospitals. Results: A total of 101 eligible patients were enrolled in the study. 31 deaths occurred during hospitalization. Patients who expired had on admission d-dimer levels of 2729 ± 3243 ng/mL while those discharged had d-dimer value 973 ± 1553 ng/mL (p value < 0.007). d-dimer of expired patients on day 3 was 3206.5 ± 3338.8 and of discharged patients was 828.8 ± 1268.8 (p value 0.001). d-dimer of expired patients on day 5 was 5184.5 ± 3386.1 vs discharged patients was 828.8 ± 1268.8 (p value < 0.001). The number of days in ICU for patients who expired was 14.22 ± 6.7 while those survived 7.6 ± 5.9. Conclusion: We conclude that SARS-CoV-2 infected patients with an increasing trend of d-dimer (from admission to day 5) have worse clinical outcomes (all-cause mortality) and thus measurement of d-dimers on admission and its trend can guide in clinical decision making.

132. Waking up Blind in ICU in a Burn Patient: A Case Report (Conference Abstract ID: ABS0132)

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DOI: 10.5005/jp-journals-10071-23712A.132

Introduction: The objective of this report is to analyze and summarize the current literature on ischemic optic neuropathy (ION), a rare complication in severe burn and trauma victims, while presenting an urban burn center’s experience with the condition. We present the case of a 27-year-old healthy male
patient admitted to our Burn Center with 85% total body surface area (TBSA) full-thickness burns sustained in a house fire. The patient had a complicated hospital course but improved over time and was weaned off of prolonged ventilation and sedation. Subsequently, he complained of bilateral blindness. A fundoscopic examination demonstrated bilateral pale optic nerves with sparing of the remaining peripheral retina consistent with ION. The patient suffered complete bilateral vision loss. He had multiple factors that could have instigated the development of ION, including several episodes of septicemia, hypovolemic shock, and severe adult respiratory distress syndrome (ARDS) with refractory hypoxemia requiring prolonged ventilation support and vasopressor therapy.

Conclusion: Due to the advancement of the treatment of acute burns, the survival rate of patients that once would have succumbed to their burn injury, is increasing. With these new achievements, we are facing new challenges and complications. ION has a significant impact on the quality of the patient's life. The early diagnosis will not necessarily translate into a benefit for these patients as no treatment has been proven successful. Extensive retrospective and prospective studies are necessary to identify and treat this patient population. Keywords: blindness, burn complications, ION, ischemic optic neuropathies, naion, neuro-ophthalmology, non-arteritic ischemic optic neuropathy.


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DOI: 10.5005/jp-journals-10071-23712A.133

Introduction: Post intubation tracheal stenosis remains the most common indication of tracheal resection and reconstruction. It can cause respiratory symptoms that can often be misdiagnosed as obstructive lung disease. Various treatment modalities are available. As office-based procedures have been common, awake or mildly sedated endoscopic procedures with spontaneous ventilation are now being performed by flexible bronchoscopy.

Materials and methods: We report a case involving a 45-year-old male who presented with dyspnea and stridor for 15 days. The patient had a past history of intubation and ICU stay 1 month back. After proper topicalization of the upper airway of the patient, electric cauteration and balloon dilatation was performed by flexible bronchoscope under conscious sedation and spontaneous ventilation. Conscious sedation was achieved by graded doses of propofol and fentanyl. The postoperative period was uneventful, and the patient did not describe any discomfort. Conclusion: Improvement in symptoms was reported. Endoscopic procedures for tracheal pathology under conscious sedation seems to be a feasible and safe procedure.

135. Role of Gabapentin in Traumatic Brain Injury: A Prospective Comparative Study (Conference Abstract ID: ABS0135)

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DOI: 10.5005/jp-journals-10071-23712A.135

Introduction: Traumatic brain injury (TBI) is one of the most important causes of mortality in the younger population.1 65% of deaths in road traffic accidents are caused due to TBI.2 Various medical regimens have been used to treat syndromes, which happen after TBIs but no standard protocol has been made.3 One of the most common syndromes in TBI is paroxysmal sympathetic hyperactivity (PSH). Earlier drugs like clonidine, fentanyl, and midazolam were used to treat PSH but all had some side effects and none had any effect in preventing secondary brain injury.4–7 Ours is the 1st prospective study carried out to compare and evaluate the effects of gabapentin in TBI patients and assess their role in the prevention of secondary brain injury. Study objective: Primary aim: To study the effects of gabapentin in the prevention of secondary brain injury, prevention of brain edema, by improvement in Glasgow Coma Scale (GCS), in traumatic head injury patients. Secondary aim: To study the effects of gabapentin in the prevention of dysautonomia/PSH arising due to secondary injury, to study any side effects of drugs. Materials and methods: After ethical committee approval, the study was conducted from September 2019 to July 2021. All adults (≥18 years) ICU patients with traumatic head injury Moderate GCS (8–13) and Severe GCS (<8) were included in the study. Age <18 years, death within 48 hours, non-consenting patients, pregnant females, and those having an allergy to gabapentin were excluded. 2 groups were created after random allocation of included patients. Gabapentin oral tablets in a dose of 300 mg BD were started within 24 hours of ICU admission in the study group. The multivitamin tablet was given in BD doses to the control group. Drugs were administered for 2 weeks period as done in previous studies. They were followed up in ICU and up to 3 months after discharge in follow-up clinics and on telephonic conversation. NCCT Brain was done as per ICU protocol and reviewed Performa containing all the details of patients’ vitals, GCS, and CT Scans will be filled. PSH-AM scoring was done and the number of PSH episodes was recorded. Glasgow outcome scale (GOS) at the time of discharge from ICU and hospital were noted. Results: 48 patients (70% male) were recruited till date and after excluding 4 patients they were randomly divided into 2 groups. The median age of patients was (32 ± 08 years). The study group showed significant improvement in sensorium as well as the decreased requirement of sedation. The occurrence of PSH was 8% in the study group as compared to 13% in the control group. Overall morbidity assessed at the time of discharge and follow-up were comparable in both groups. Conclusion: Its first-of-its-kind study highlights the use of gabapentin in traumatic brain injury, its effect on secondary brain injury, and decreasing the intensity and frequency of PSH.

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DOI: 10.5005/jp-journals-10071-23712A.136

Aims and objectives: Multiple studies have suggested that neutrophil-lymphocyte ratio (NLR) derived from differential white cell count might be a useful marker for COVID-related disease severity and mortality. We conducted a systematic review and meta-analysis and investigated if the same can be predicted with on-admission NLR values and also evaluated the prognostic significance of NLR on disease outcomes in patients with COVID-19.

Materials and methods: We searched PubMed, EMBASE, MEDLINE, and SCOPUS databases for published articles in peer-reviewed journals from 01 March 2020 and 01 March 2021. Meta-analysis was performed to determine the pooled standardized mean difference (SMD) for the mean values of NLR. A random-effects meta-regression was performed for the following potential confounders: age, gender, and comorbidities.

Results: After study screening, systematic review included 68 studies comprising 15,818 patients in total, 2260 with severe disease and 1198 patients with mortality outcomes. The meta-analysis showed significant difference in mean NLR between severe and non-severe patients (SMD was 2.88 (95% CI: 2.32 to 3.44)) and between survivors and non survivors (SMD was 7.89 (95% CI: 3.37 to 12.42)). Both outcomes were heterogeneous (Q = 1912.85, P < 0.0001, tau² = 98.35% and Q = 5898.15, P < 0.0001, tau² = 99.92% for severity and mortality, respectively). Meta-regression analysis showed that the association between NLR values on admission and severity in COVID-19 patients was not influenced by age (p = 0.893), cardiovascular diseases (p = 0.259), diabetes mellitus (p = 0.545), or hypertension (p = 0.104).

Conclusion: On admission, NLR predicts both severity and mortality in COVID-19 patients and is not affected by age or comorbidities. Further high-quality studies are needed to confirm these findings.

Results: 2: After study screening, systematic review included 68 studies comprising 15,818 patients in total, 2260 with severe disease and 1198 patients with mortality outcomes. A summary receiver operating characteristic (SROC) curve to determine a pooled estimate of the prognostic accuracy of NLR for severity showed that the pooled sensitivity, specificity, and diagnostic odds ratio were 78.8% (95% CI: 73.5–83.2%), 73.0% (95% CI: 68.4–77.1%), and 11.483 (95% CI: 7.814–16.875), respectively, with AUC of 0.820. Meta-regression analysis showed that the association between NLR values on admission and severity in COVID-19 patients was not influenced by age (p = 0.893), cardiovascular diseases (p = 0.259), diabetes mellitus (p = 0.545), or hypertension (p = 0.104).

137. Case Report: Management of Sepsis-induced AKI with Post-partum Cardiomyopathy (HFrEF) (Conference Abstract ID: ABS0137)

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DOI: 10.5005/jp-journals-10071-23712A.137

Aim and background: Cardiac disease is the leading cause of maternal death and one of them is post-partum cardiomyopathy which is described in 1800, it is a life-threatening condition and a challenge for treating physicians, it occurs in 1 in 2000 live births, the co-morbidities complicates the condition and increases the chance of morbidity and mortality. PPCI is idiopathic cardiomyopathy that presents with heart failure followed by left ventricular systolic dysfunction during puerperium in absence of any other cause of heart failure. I am reporting a case of a 22-year-old female with 31 weeks of pregnancy Gp1, Lp1, patient admitted to RMCH, Bareilly with complained of swelling all over the body for the 3 months and shortness of breath for 4 days which started the same day after LSCS with IUD the patient diagnosed AKI with Sepsis with HTN with cardiomyopathy (Post-Partum). This was a great challenge to save the patient as she was going into multiorgan dysfunction syndrome. Objective: Critical care management and early decision can change the outcome in PPCM.

Materials and methods: The diagnosis is made based on clinical aspects and confirmed by the 2D echocardiography the other investigations also be done like, CBC, urea, creatinine sodium, potassium, ECG, viral markers, chest X-ray, and urine routine. The surgical and medical management has to be done. Management of PPCM is same as the congestive heart failure (fluid and salt restrictions, diuretics, digoxin, and potassium-sparing agents) in this case the use of broad-spectrum antibiotics, blood products, anti-coagulant, anti-hypertensive, and hemodialysis is timely done with close monitoring.

Results: The ejection fraction of the patient was 20% during the course of treatment in the hospital (27 days) patient has been discharged and on follow up after 3 weeks. Echocardiography screening was done and found EF of the patient improved from 20% to 35%. Conclusion: Due to rarity and variability in presentation and high potential of mortality, PPCM should be considered in women the complications can be avoided by screening most of the patients with features of cardiovascular symptoms during ANC as it can mimic major physiological changes of pregnancy and can increase the risk of mortality for both the mother and fetus with co-morbidities. Once it is diagnosed regular cardiac follow-up is essential.


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Introduction: COVID-19 pandemic has affected the whole world. Besides COVID, other viral infections may emerge during the course of the disease owing to lymphopenia, use of immunosuppressants, underlying comorbidities, and immune dysregulation, which may pose additional threats. We hereby describe two cases of COVID-19 with viral co-infections belonging to the Herpesviridae family with undulating clinical course. Case 1: Cytomegalovirus (CMV) Co-infection: A 55-year-old male, COVID unvaccinated, chronic smoker, overweight and hypertensive was admitted to our ICU with a 1-week history of fever, cough, and breathlessness. SARS-CoV-2 reverse transcriptase-polymerase chain reaction (RT-PCR) test was positive. At admission, he had hypoxaemia (SpO₂ 86% on room air), respiratory rate 35–40/minute, and ground-glass opacities in chest X-ray involving 50% of bilateral lung parenchyma suggestive of severe COVID-19 pneumonia. He was managed with lung-protective invasive mechanical ventilation, restrictive fluid strategy, 16–18 hour/day proning sessions (4–5), intravenous (IV) remdesivir, IV dexamethasone 6 mg 12 hourly, and enoxaparin thromboprophylaxis. After 2 weeks of ICU stay, weaning was attempted but the weaning attempts failed due to underlying neuromuscular weakness. On examination, bilateral (B/L) cranial nerve palsies, areflexia, and motor power 0/5 in bilateral upper and lower limbs were noticed. Possibility of Guillain–Barre syndrome (GBS) was kept and IV immunoglobulin therapy was empirically administered for 5 days with some improvement in power up to 1/5 in upper limbs. On day 35 of hospitalization, he developed pancytopenia along with features of deranged liver function and

Table 1: Comparison of Case 1 with Case 2. Chronic obstructive pulmonary disease (COPD), Sequential organ failure assessment (SOFA), Cytomegalovirus (CMV), Herpes simplex virus (HSV), mechanical ventilation (MV)

<table>
<thead>
<tr>
<th>Case 1</th>
<th>Case 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>54</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
</tr>
<tr>
<td>Co-morbidities</td>
<td>Hypertension, Type 2 diabetes mellitus, Obesity, COPD, Hypothyroidism</td>
</tr>
<tr>
<td>SOFA admission</td>
<td>3–4</td>
</tr>
<tr>
<td>Duration of MV</td>
<td>61 days</td>
</tr>
<tr>
<td>Shock days</td>
<td>54–55 days</td>
</tr>
<tr>
<td>Virology workup</td>
<td>6th week of illness</td>
</tr>
<tr>
<td>Viral co-infection</td>
<td>CMV</td>
</tr>
<tr>
<td>Risk factors for viral reactivation/co-infection</td>
<td>Multiple co-morbidities, Steroids, Critical illness</td>
</tr>
<tr>
<td>Outcome</td>
<td>Non-survivor</td>
</tr>
</tbody>
</table>

Fig. 1: Histiocyte showing hemophagocytosis with engulfment of many neutrophils (thick arrow), Leishman stain (1000x)

Fig. 2: Pronormoblast showing nuclear inclusions (as shown by dotted arrow), Leishman stain (1000x)

Fig. 3: Histioyte showing hemophagocytosis with engulfment of many neutrophils (thick arrow), Leishman stain (1000x)

Table 2: Comparison of Case 1 with Case 2. Chronic obstructive pulmonary disease (COPD), Sequential organ failure assessment (SOFA), Cytomegalovirus (CMV), Herpes simplex virus (HSV), mechanical ventilation (MV)

<table>
<thead>
<tr>
<th>Case 1</th>
<th>Case 2</th>
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<tr>
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<td>Co-morbidities</td>
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<td>SOFA admission</td>
<td>3–4</td>
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<tr>
<td>Duration of MV</td>
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<td>Shock days</td>
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<td>6th week of illness</td>
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<td>Viral co-infection</td>
<td>CMV</td>
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<tr>
<td>Risk factors for viral reactivation/co-infection</td>
<td>Multiple co-morbidities, Steroids, Critical illness</td>
</tr>
<tr>
<td>Outcome</td>
<td>Non-survivor</td>
</tr>
<tr>
<td></td>
<td>Week 1</td>
</tr>
<tr>
<td>--------------------</td>
<td>--------</td>
</tr>
<tr>
<td><strong>Case 1</strong></td>
<td></td>
</tr>
<tr>
<td>MV; Moderate-Severe ARDS (Berlin criteria)</td>
<td>Yes</td>
</tr>
<tr>
<td>Proning</td>
<td>6–7 sessions</td>
</tr>
<tr>
<td>Vasopressors</td>
<td>No</td>
</tr>
<tr>
<td>AKI</td>
<td></td>
</tr>
<tr>
<td>Blood products</td>
<td></td>
</tr>
<tr>
<td>Liver dysfunction</td>
<td>Yes</td>
</tr>
<tr>
<td>Abdominal distension</td>
<td>Yes</td>
</tr>
<tr>
<td>DVT</td>
<td>Yes</td>
</tr>
<tr>
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</tr>
<tr>
<td>VAP</td>
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</tr>
<tr>
<td>BSI</td>
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<tr>
<td>CAUTI</td>
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<tr>
<td>Steroids</td>
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</tr>
<tr>
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</tr>
<tr>
<td>Antibiotics/antifungals</td>
<td>Yes</td>
</tr>
<tr>
<td>Ganciclovir</td>
<td></td>
</tr>
<tr>
<td>IVIG for 5 days</td>
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</tr>
<tr>
<td>LMWH/mechanical prophylaxis as feasible</td>
<td></td>
</tr>
<tr>
<td>Outcome</td>
<td>Patient expired</td>
</tr>
</tbody>
</table>

| **Case 2**         |        |        |        |        |        |        |        |        |        |
| SAH (not progressing) |        |        |        |        |        |        |        |        |        |
| Room air; Hemodynamically stable |        |        |        |        |        |        |        |        |        |
| Intermittent fever  |        |        |        |        |        |        |        |        |        |
| Pancytopenia       | Yes    | Yes    | Yes    | Yes    | Yes    | Yes    | Yes    | Yes    | Yes    |
| Hepatosplenomegaly | Yes    | Yes    | Yes    | Yes    | Yes    | Yes    | Yes    | Yes    | Yes    |
| Virology workup    | Yes    | Bone marrow workup | Yes    | Yes    | Yes    | Yes    | Yes    | Yes    | Yes    |
| Bone marrow workup |        |        |        |        |        |        |        |        |        |
| NCCT Head          |        | HRCT chest/NCCT abdomen and pelvis | MRI brain with MR angiography and MR venography (before discharge): no progression of SAH |        |        |        |        |        |        |
| IV/oral Acyclovir  | Yes    |        |        |        |        |        |        |        |        |
| IV/oral Doxycycline| Yes    | Yes    |        |        |        |        |        |        |        |
| Iron replacement   | Yes    | Yes    |        |        |        |        |        |        |        |
| Vitamin B12/Folic acid replacement | Yes    | Yes    |        |        |        |        |        |        |        |
| Anti-epileptic drugs | Yes    | Yes    | Yes    |        |        |        |        |        |        |
| Outcome            | Patient discharged |        |        |        |        |        |        |        |        |
gut dysfunction. In evaluation, PCR for CMV turned out to be positive in blood. Bone marrow aspiration and biopsy showed hemopoiesis with viral inclusion bodies and hemophagocytosis (HLH) (Figs 1 and 2). A diagnosis of secondary HLH related to CMV was contemplated and IV ganciclovir was initiated along with steroids. Histological evidence of CMV co-infection was present and moreover, the quantitative viral load of CMV showed a decreasing trend after initiating IV ganciclovir. However, the patient continued to deteriorate and succumbed to his illness in the 8th week of the ICU stay. **Case 2: Herpes Simplex Virus (HSV) Co-infection:** Twenty-three years postpartum female with no comorbidities and uneventful obstetric history was referred to our hospital two weeks after a full-term normal vaginal delivery. She developed generalized status epilepticus on the 10th day of delivery, which was managed with anti-epileptic drugs (AEDs). During the hospital stay, RTPCR for COVID-19 turned out to be positive but she remained asymptomatic and seizures were well-controlled on AEDs. On admission to our hospital, she was fully conscious and alert with no neurological deficits. Notable findings were pancytopenia with megaloblastic features, B/L pedal edema, and hematopoesenomalgy. NCCT brain revealed mild subarachnoid hemorrhage (SAH) along the bilateral parietooccipital region for which conservative management was planned. 2D echocardiography was normal. Ultrasonography of the abdomen showed gross splenomegaly and mild hepatoamegaly with mesenteric lymphadenopathy. NCCT thorax and abdomen were unremarkable apart from hematopoesenomalgy. In pancytopeny workup, IgM anti-HSV-1 antibodies turned out to be positive in blood. In addition, tropical workup was suggestive of Leptospirosis (IgM antibodies positive). Serological evidence was suggestive of acute HSV-1 infection (based on antibody titers). Bone marrow workup had features of trilineage hematopoiesis with micronormobilic maturation consistent with iron deficiency anemia without any evidence of hemophagocytosis. IV acyclovir, IV doxycycline, and iron replacement were added, after which she improved clinically and was discharged in stable condition. Tables 1 and 2 show a detailed description of these cases. **Discussion:** Herpesviridae family is the most important group of viruses responsible for persistent viral infections in humans, of which CMV contributes to 60–90% of infections in adults, especially in developing countries. In healthy individuals, these viruses are kept dormant by the body’s immune mechanisms but in an immunocompromised population, reactivation from the latent state can occur. SARS-CoV-2 infection predisposes patients to concomitant viral co-infections, owing to T-cell lymphopenia, decreased NK cell number, and use of immunosuppressive medications. The first case of CMV co-infection was first reported by D’Ardes and co-workers in 2020. Since then, many studies have been emerging in this area. In an observational study from France, 38 COVID-19 patients on >7 days of MV were studied for HSV and CMV pulmonary co-infections (by quantitative real-time PCR in tracheal samples) out of which 47% of patients had one of these infections (24% HSV, 5% CMV, 18% both). Another study looking for HSV-1 in patients with invasive MV found HSV-1 reactivation between days 11 and 40, which correlated with immunological markers of decreased innate immunity. A case series looking for CMV infection (by PCR in plasma or BAL) in COVID-19, also found CMV reactivation between day 7 and 45 of illness. Most of these patients were above 60 years of age and immunosuppressed (HIV, diabetes mellitus, medications). Although immunocompromised individuals are more vulnerable, healthy immunocompetent adults who are critically ill or on prolonged MV may also be susceptible to these infections. This may be explained by a state of immunoparalysis inherent to prolonged critical illness. In case 1, an ICU stay of around 9 weeks complicated with recurrent nosocomial infections, multiple blood product transfusions, and steroid usage could have the likely triggers. Whether viral co-infections are merely bystanders or truly pathogenic is difficult to comment but timely management is essential to avoid end-organ damage (EOD) which may occur directly (by enhanced viral load secondary to compromised host immunity) or indirectly (by inflammatory changes consequent to prolonged cell-mediated immunity required to maintain viral dormancy). It also seems imperative to study if a viral co-infection has a proclivity to develop more severe hematological anomalies (besides the inherent risk of HLH with COVID) as was seen in case 1, in which the patient had a downward spiral of illness with multiorgan dysfunction. **Limitations:** Dynamics of PCR trends and virology studies of samples from trachea, gut, and urine could not be analysed in our patients. **Conclusion:** Viral co-infections can occur in COVID-19 disease as these patients are often immunocompromised and critically ill. A high index of suspicion and prompt management is needed to improve the outcome of patients. Patients with organ dysfunctions especially hematologic abnormalities with bone marrow involvement should be worked up in detail to look for concomitant viral co-infections. In the future, large-scale research is needed to better elucidate the relationship between SARS-CoV-2 and other viral co-infections.

**References**


A 55-year-old male, COVID unvaccinated, chronic smoker, overweight, and hypertensive patient was admitted to our ICU owing to lymphopenia, use of immunosuppressants, underlying comorbidities, and immune dysregulation. Although we have come across the threat of fungal infections and resistant bacterial infections, experience regarding reactivation or co-infection with other viral infections is still limited. We hereby describe a case of COVID-19 disease with cytomegalovirus (CMV) co-infection. Case summary: COVID-19 with Cytomegalovirus (CMV) Co-infection. A 55-year-old male, COVID unvaccinated, chronic smoker, overweight, and hypertensive patient was admitted to our ICU with a 1-week history of fever, cough, and breathlessness. SARS-CoV-2 reverse transcriptase-polymerase chain reaction (RT-PCR) test was positive. At admission, he had hypoxaemia (SpO2 86% on room air), respiratory rate (RR) 35–40/minute, and ground-glass opacities in chest X-ray involving 50% of bilateral lung parenchyma suggestive of severe COVID-19 pneumonia. He was managed with lung-protective invasive mechanical ventilation, restrictive fluid strategy, 16–18 hour/day proning sessions (4–5), intravenous (IV) remdesivir, IV dexamethasone 6 mg 12 hourly, and enoxaparin thromboprophylaxis. After 2 weeks of ICU stay, weaning was attempted but the weaning attempts failed due to underlying neuromuscular weakness. On examination, bilateral (B/L) cranial nerve palsies, areflexia, and motor power 0/5 in bilateral upper and lower limbs were noticed. A possibility of Guillain–Barre Syndrome (GBS) was kept and IV immunoglobulin therapy was empirically administered for 5 days with some improvement in power up to 1/5 in upper limbs. On day 35 of hospitalization, he developed pancytopenia along with features of deranged liver function and gut dysfunction (in the form of paralytic ileus and abdominal distension). In evaluation, polymerase chain reaction (PCR) for CMV turned out to be positive in blood with a very high viral load. Bone marrow aspiration and biopsy showed hemopoiesis with viral inclusion bodies and haemophagocytosis (HLH). Histological evidence of CMV inclusion bodies was present in the bone marrow besides viremia (detected by PCR for CMV), which confirmed the diagnosis of CMV co-infection. IV ganciclovir was initiated along with steroids in view of HLH. There was a decrease in CMV viral load after initiation of IV gancyclovir with subtle clinical recovery. However, the patient continued to deteriorate and succumbed to his illness in the 8th week of the ICU stay.

140. Surveying the Prevalence of Mental Health Disorders among Healthcare Workers During the COVID-19 Pandemic (Conference Abstract ID: ABS0140)

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The COVID-19 pandemic has ravaged populations across the globe. The toll taken is unprecedented in the modern age. Aside from this obvious morbidity and mortality, there is an under-appreciated pandemic of mental illness that is sweeping across the world. Mental health issues in health care professionals have long since been identified to be a significant problem. Our experiences during previous similar epidemics have shown that such situations take a huge toll on the physical as well as mental health of personnel affected, either directly by infection or indirectly by the social and economic consequences of the pandemic. The health care worker may find him/herself in a very challenging situation, dealing simultaneously with multiple sources of stress in an ever-changing environment. These manifest in the form of serious mental issues such as depression, anxiety, stress, sleep disturbances, and post-traumatic stress disorder, to name a few. These can have a long-lasting impact on the psychological makeup of the victims. We conducted this survey-based study to assess the prevalence of depression and anxiety among a wide range of personnel involved in health care, in different settings, working in the front line and non-front line scenarios. Aims and objectives: To assess the prevalence of developing anxiety and depression among health care workers during the COVID-19 pandemic and to compare the prevalence thereof based on various factors such as occupation, pre-existing health issues, level of work, social background, working directly with infected patients. Materials and methods: Survey-based, prospective, observational cohort study including data collection over 1 month. The online survey was circulated as a Google Form and made available to all healthcare workers pan India. The study included the Patient Health Questionnaire-9 (PHQ-9) and the General Anxiety Disorder-7 (GAD-7) scales along with other personal information, gathered anonymously. The paired t-test and Mann–Whitney U-test were used to determine the statistical significance. Results: The mean age of the population was 39.9 years, with equal distribution among the sexes. 70% of subjects were married and 76% lived with their families. The commonest co-morbidities were hypertension (n = 66), obesity (n = 61), diabetes (n = 37), 60.4% had PG qualifications, 69.3% were treating physicians, and 49.4% were consultants. 90.3% worked in urban settings, 65.5% worked at the tertiary level. 37.4% worked directly with COVID-19 patients. 24.4% of respondents worked in ICU, 14.7% in OPD, 12% in ward settings. Gross prevalence of depression was 43% (mild: 22.6%, moderate 11.2%, moderate-severe 5.1%, severe: 3.9%). Prevalence of anxiety...
was 47% (mild 26%, moderate 13%, severe 7%). Depression was commoner among men (p = 0.04), those in a relationship (p = 0.00), those with children (p = 0.00) in older age groups, with higher positions and educational qualifications, and those with co-morbidities (p = 0.00). It was less prevalent in front-line workers, including physicians (p = 0.00). Among the front-line workers, depression and anxiety were more prevalent among physicians (p = 0.01). Depression was commoner in OPD and ED settings (p = 0.00), and less for people getting quarantine period (p = 0.00).

Conclusion: Our survey shows a higher than average prevalence of anxiety and depression among health care workers in India as compared to non-pandemic periods. We have also identified groups that are at higher risk for mental health issues and

141. Ventilator-associated Pneumonia in COVID-19 Patients

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Aim and background: Coronavirus disease 2019 (COVID-19) pandemic caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has a high incidence of patients with the severe acute respiratory syndrome (SARS). Many of these patients require admission to an intensive care unit (ICU) for invasive ventilation and are at very high risk of developing ventilator-associated pneumonia (VAP).1–3 Objectives: To study the incidence and mortality of VAP of ventilated COVID-19 patients.

Materials and methods: We retrospectively collected data on all patients hospitalized for COVID-19 during the first phase of the epidemic in a 9 bed ICU who were on invasive mechanical ventilation for >48 h. We studied the characteristics of VAP in these patients. VAP was diagnosed based on official recommendations.

Results: Data of 55 patients was analyzed. Of these 23 (41.8%) had VAP. Patients with VAP required a greater number of ventilatory days (13.6 ± 6.2 vs 6 ± 4) and underwent more tracheostomies [9 (39.13%) vs 1 (3.13%)]. Length of ICU and hospital stay were significantly prolonged in COVID-19 VAP group 17.9 ± 11 vs 9.18 ± 6.11 days (p = 0.0002) and 18.3 ± 11 vs 9.9 ± 6.4 days (p = 0.0004), respectively. Also, organ involvement was significantly higher in the VAP group. Patients in both group had similar mortality, VAP – 15 (65.2%) vs non VAP – 18 (56.25%). Conclusion: COVID-19 is associated with an increased risk of VAP, which is not fully explained by the prolonged duration of ventilation. Complications like organ involvement and prolonged ventilatory days are common in COVID-19 VAP patients and need to focus on general supportive treatment and organ-specific treatment.

References


142. Efficacy and Safety of Levonadifloxacin in the Management of Community-acquired Bacterial Pneumonia (CABP): Findings of a Retrospective, Real-world, Multi-center Study (Conference Abstract ID: ABS0142)

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Aim and background: Community-acquired bacterial pneumonia (CABP) remains a global public health threat and is a leading cause of hospitalization and infection-linked mortality. Choice of empirical antibiotics can pose challenges to the treating clinician and factors such as efficacy, tolerability, duration, and frequency of treatment will take on more importance while selecting empirical treatment for CABP. Levonadifloxacin is a novel benzoxiquinolizine antibiotic with a broad-spectrum activity against MDR Gram-positive pathogens including methicillin-resistant Staphylococcus aureus (MRSA), Streptococcus pneumoniae, respiratory pathogens, i.e., Haemophilus influenzae and Moraxella catarrhalis; atypicals and anaerobes. Potent in vitro activity of levonadifloxacin has been demonstrated against extracellular pathogens commonly associated with community-acquired pneumonia. A pulmonary pharmacokinetic study showed a remarkable penetration of levonadifloxacin into epithelial lining fluid (7.7 times the unbound plasma concentration) and in alveolar macrophages (2 times the unbound plasma concentration). This higher attainment of intrapulmonary levels point towards the clinical utility of levonadifloxacin for the treatment of respiratory infections caused by extracellular and intracellular pathogens. The data presented here is part of a large multicenter, post-marketing, observational study (PIONEER study) conducted for the assessment of the safety and efficacy of levonadifloxacin in India. Patients and methods: This multi-center, retrospective, real-world study assessed the efficacy and safety of levonadifloxacin oral and/or intravenous therapy in the treatment of CABP. Data from 338 patients above 17 years of age who received levonadifloxacin were collected from 89 healthcare facilities across India. Information on clinical condition, comorbidities, complications, and details of concurrent therapy (including antimicrobial agents) was also collected. Study outcomes were clinical and microbial success at the end of therapy while safety was assessed based on clinical and laboratory adverse events. Global assessments were done for each patient for efficacy and safety based on a 5-point Likert scale of excellent, very good, good, satisfactory, and poor. Results: Of the 338 patients, 244 (72.2%) were males, 93 (27.5%) were females and 1 (0.43%) was a transgender. About 294 (87.0%) patients were hospital-treated and 44 (13%) received outpatient treatment. About 248 (73.4%) patients received intravenous levonadifloxacin treatment, 79 (23.4%) received oral, and 11 (3.3%) received intravenous followed by oral levonadifloxacin therapy. The common comorbid conditions were diabetes (14.2%) and hypertension (8.6%). Bacteremia (28.4%) and sepsis (19.23%) were the most common complications at the time of admission. Gram-positive (53.8%) were commonly
143. Case of Pendimethalin Poisoning in Young Adult: A Case Report (Conference Abstract ID: ABS0143)

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**Aim and background:** Pesticide poisoning is the most important cause of suicide in the world as per WHO. Around 849,000 deaths every year occur by Suicide, a cause of premature mortality. India is an agricultural country with a majority of the rural population (60–80%). Free availability and extensive uses of agrochemical compounds make it a major health issue as acute intoxication. **Introduction:** Pendimethalin (C₁₃H₁₉N₃O₄) is a dinitroaniline herbicide, a slightly toxic compound in EPA toxicity class III which is available freely. Only a few cases of its toxicity have been reported till date around the world, but not in India. For the control of grasses and broadleaf weeds, pendimethalin is used extensively as an herbicide. Pendimethalin is placed in group C possible human carcinogen with the least human toxicity as per the United States environmental protection agency. **Case report:** A 25-year-old girl was brought to emergency at 1.30 pm with an acute episode of nausea, vomiting, sore throat, retching and hematemesis, etc., and the usual symptoms of its toxicity. **Discussion:** Pendimethalin toxicity is practically non-toxic to humans. When there are large ingestions, the patient presents with headache, nausea, vomiting, sore throat, retching, hematemesis, etc. Its toxicity is mainly associated with oral ingestion. In a study of 71 cases in a tertiary institute, 69 were associated with its ingestion; intentionally or accidentally. Among them, 20 remained asymptomatic, 38 had mild effects (nausea, vomiting, and sore throat) and only seven patients develop significant toxicity in the form of severe retching, vomiting of blood, etc. Four patients died as a result of also taking other herbicides and because of inadequate airway management. **Conclusion:** Over the last few decades, poison control training and research centers have been created globally to encounter this problem. But unfortunately, there is a complete lack of such centers in rural areas where these are needed most.

144. Are COVID-19 Lungs Recruitable-yes!!! If Done the Right Way (Conference Abstract ID: ABS0144)
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**Aim and objective:** To find out whether the COVID-19 affected ARDS lungs are recruitable with the combined use of 1. Transpulmonary pressure monitoring (to limit the stress); 2. End expiratory lung volume measurement (to limit strain); 3. Electrical impedance tomography; 4. Compliance (to diagnose overdistension) and the increase in the SpO₂ as a marker of clinical recruitment. **Materials and methods:** Retrospective data from charts and progress sheets were collected from 27 patients admitted to the ICU (between February 2021 and June 2021) with PaO₂/FiO₂ ratio <150 with a diagnosis of acute respiratory distress syndrome. **Data acquisition:** As a protocol, the esophageal pressure was monitored using the polyfunctional nasogastric tube (Nutrivent®). The end-expiratory volume was measured using the Carescape R860 (Carescape R860; GE Healthcare) by the nitrogen multiple breath wash-out/wash-in (EELV) at a PEEP of 5. Electrical impedance tomography measurements were performed using the PulmoVista 500. We performed a recruitment maneuver using the “staircase manoeuvre”. **Statistics:** Categorical variables are presented as frequency and percentage (%) and continuous variables are presented as mean and standard deviation. Comparison between pre- and post-recruitable was tested using t-test, while repeated-measures ANOVA was used to test follow-ups like 2 hours and 4 hours. Statistical significance is assumed at a value of p < 0.05. **Results:** As per the results of our study we found that almost 2/3rd (66.7%) of the COVID ARDS lungs were recruitable safely. The average plateau pressure (cm of H₂O), mean compliance, FRC, and SPO₂ were noted before the attempt at recruitment and after recruitment. After conducting the staircase manoeuvre, the plateau pressure remained at 25.56 with a standard deviation of 3.641. However, the mean compliance rose to 31.926 with a standard deviation of 10.099. Post recruitment there was a marked rise of FRC to 1581.778 with a standard deviation of 311.049 mL. Pre recruitment means SPO₂ was 83.6% with a standard deviation of 3.9%. Post recruitment at 2 hours the SPO₂ had reached 91.1% with a standard deviation of 5.4% and remained the same at 91.9% with a standard deviation of 7.5%. Among the 27 patients’ clinical recruitment was seen in 18 patients (66.7%). As per the results of our study, we found that almost 2/3rd (66.7% or 18/27 pts) of the COVID ARDS lungs were recruitable safely (rise in SPO₂ maintained at 2 and 4 hours along with the absence of overdistension as seen on EIT with an increase in FRC and compliance). **Conclusion:** As per the results of our study almost 2/3rd of COVID-19 patients were recruitable. This is the first Indian study to comprehensively study recruitment in COVID-19.
AROS pts with the best available techniques. This study shows that majority of COVID-19 lungs may be recruitable in the earlier stage of the illness (within the first week of ARDS) and thus warrant a trial of a safe monitored recruitment strategy.

146. USG Guided Deep Peripheral Venous Access Using Long Peripheral Catheter in Critically Ill Patients with Difficult Intravenous Access (Conference Abstract ID: ABS0146) 

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Materials and methods: A prospective study was conducted at 40 bedded ICU in a trauma centre between October 2020 and February 2021. All critically ill patients aged >18 years with DVA were included in the study after IEC approval and written informed consent. The arm was first scanned by an experienced operator and a suitable vein was selected for cannulation. Under aseptic precautions, a deep vein was cannulated under real-time USG guidance. All data were entered and analyzed using SPSS version 20.0 by standard descriptive statistics. Results: One hundred and forty critically ill patients were included in the study. The most common reasons for difficult vein cannulation were the invisibility of veins (40%) and limb edema (28.6%). The average diameter and depth of veins selected for cannulation were 3.5 ± 0.8 mm and 2.5 ± 0.7 mm, respectively. The first attempt success rate was 75%. The average duration of vein visualization and cannulation were 14.7 ± 6.8 seconds and 63.1 ± 44.4 seconds. The average catheter dwell time for catheter removal was catheter occlusion (44.3%). Conclusion: USG guided L-PVC insertion into deep upper limb veins in the setting of difficult IV access is feasible with the least number of complications and longer dwell time. This could be a safer option compared to central venous cannulation. All authors declare no conflict of interest. No financial support was received for this study.

147. Lightning Strike with Multisystem Involvement: A Case Report (Conference Abstract ID: ABS0147)

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A 32-year-old male was admitted with a history of loss of consciousness for a few minutes following a lightning strike while he was riding on a motorcycle. On arrival, GCS – E4M6V3, was hemodynamically stable, and there were first-degree burns over the face, chest, right thigh, and groin. Whole-body CT scan done showed no injuries except petechial hemorrhages in the left basal ganglia and left frontal lobe. The very next day patient was intubated in view of respiratory distress and shifted to ICU for further management. ECHO showed moderate left ventricle dysfunction and mild elevation of cardiac enzymes. Lab investigations showed elevated CPK (43,865 IU/L) and mild elevation of serum creatinine. Patient muscle power gradually started decreasing and he was not able to move his limbs by day 4. The nerve conduction study was normal. MRI spine with brain showed prevertebral hematoma in the entire cervical region. Multidisciplinary management was carried out. Tracheostomy was done on day 10 and the patient gradually weaned off from mechanical ventilation. In the course of management by the end of 1 month of hospital stay, the patient had gradual improvement in muscle power and tracheostomy was successfully decannulated. The patient got discharged from the hospital.


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Aim and background: Cases of thrombotic thrombocytopenia induced by coronavirus disease 2019 (COVID-19) vaccines have been reported recently. Herein, we describe hemophagocytic lymphohistiocytosis (HLH) following COVID-19 vaccination. Case report: A 35-year-old male, chronic alcoholic, 3 years into abstinence received first dose Covishield vaccine. He started developing a fever, testicular pain, diminished sensorium requiring invasive ventilation, and decreased urine output 4 days after getting vaccinated. Initial workup for NCCT brain and HRCT chest was normal, tropical fever panel was negative, cultures for blood and endotracheal aspirate were sterile, liver and renal functions showed mild derangement, CSF study was normal. Ultrasound examination of the abdomen revealed mild hepatosplenomegaly, mild testicular swelling, and suprainguinal lymphadenopathy, with no focus of infection. Subsequently, he developed bicipathyemia with haemoglobin 9.0 g/dL and platelet counts 50 × 10⁹/L, ferritin 2130 µg/L, triglyceride 353 mg/dL, and decreased fibrinogen 1.41 g/L. Bone marrow as well as lymph node biopsy showed haemophagocytosis with engulfment of neutrophils, lymphocytes, and normoblasts making HLH a likely diagnosis. Soluble CD25 and NK cell function could not be performed. Extensive evaluation was done to look into the etiology of HLH. SARS-CoV-2 reverse transcriptase-polymerase chain reaction (RT-PCR) test was negative. RT-PCR test for Epstein–Barr virus (EBV), influenza A (H1N1, H3N2), influenza B, cytomegalovirus (CMV) performed from endotracheal aspirate (ETA) was negative. Similarly, the RT-PCR test from serum samples for EBV, Parvo B-19, CMV, and from CSF sample for EBV, Parvo B-19, CMV, and HSV-1 was negative. Hepatitis B, C, and HIV serologies were negative. Culture and sensitivity repeated from
blood, ETA and urine was sterile. Autoimmune panel including complements levels were negative. Peripheral smear, bone marrow, and lymph node biopsy were normal and did not reveal abnormal or malignant cells. He had persistent fevers to 38.6°C during the first 6 days of his admission, with a rise in his ferritin to 1950 μg/L. The patient received steroids but not etoposide. By the 8th day, his fevers resolved, with improvement in his lethargy and malaise. Two weeks later, his ferritin had reduced to 510 μg/L, platelet count rose to 180 × 10^9/L, and repeat ultrasound abdomen demonstrated resolution of his splenomegaly. In our patient, there was no clear precipitant of HLH other than the Covishield vaccine. There was no evidence of an infection or malignancy. Due to our patient's clinical stability, resolution of symptoms, and improvement of HLH parameters he did not require HLH specific therapy. It is unclear if he had a pre-existing genetic predisposition to HLH as genetic testing is pending, however, it is unlikely as he has reached the age of 35 and suffered from previous viral infections without developing HLH.

149. Scrub Typhus with Severe Acute Pancreatitis and Diabetic Ketoacidosis: A Case Report (Conference Abstract ID: ABS0149)

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Introduction: Scrub typhus is a vector-borne disease caused by Orientia tsutsugamushi which is transmitted by the bite of the infected larvae (chiggers). Scrub typhus is a common cause of acute febrile illness in the Asia Pacific region. The pathophysiology of infection is mediated by endothelial inflammation which results in complications like pneumonitis, acute kidney injury (AKI) disseminated intravascular coagulopathy (DIC), and multiple organ dysfunction syndrome (MODS). Recently, there have been case reports of various rare manifestations of scrub typhus involving the pancreas. Hereby, we intend to discuss a challenging case of scrub typhus presenting with severe acute pancreatitis (SAP) and diabetic ketoacidosis (DKA). Case summary: A 51-year non-alcoholic female, resident of rural area of North India, had undergone an uneventful laparoscopic cholecystectomy under general anaesthesia elsewhere for cholelithiasis 1 month back, admitted to our intensive care unit (ICU) with a history of high-grade fever (Tmax: 104 F) with chills since 5 days, diffuse abdominal pain, distention, and vomiting since 2 days and not passed motion since 1 day. The patient is a recently diagnosed case of type 2 diabetes mellitus but has stopped insulin during this acute episode. Her vitals at admission were PR: 110/minute, BP: 130/60 mm Hg, Chest: Bilateral normal vesicular breath sounds, RR: 25/minute, SpO2 88% on room air and 93% on 5 L/minute by O2 mask and Glasgow Coma Scale score of 12/15 (E3V4M5). The patient was anuric at ICU admission. Her abdomen was distended, tender, with marks of healed laparoscopic ports and without any guarding or rigidity. Ultrasonography (USG) abdomen revealed hepatomegaly with mild ascites, bulky pancreas, and findings suggestive of acute medical renal disease. There was no evidence of cholecodolithiasis on the USG abdomen. Deranged renal functions precluded computed tomography of the abdomen. ABG analysis at admission showed high anion (17 mmol/L) gap metabolic acidosis with hyperkalemia (pH: 7.23, pCO2: 27 pO2: 123, lactates: 1.2 mmol/L, Base deficit: 15, and Bicarbonate: 11 mmol/L and Serum potassium: 6.58 meq/L). Her HbA1C was 10.7%, random blood sugar was 316 mg/dL, serum ketone: 3.51 mmol/L, and urine ketones by dipstick test at the resolution of anuria was 2+. The patient was diagnosed as a case of scrub typhus with immunoglobulin M antibody-positive for scrub typhus by enzyme-linked immunosorbent assay. All other relevant causes of tropical acute febrile illness were ruled out by appropriate laboratory tests. Thorough body examination did not reveal any Eschar. Her 2D echocardiography was unremarkable. X-ray chest anteroposterior (AP) view: bibasilar atelectasis. X-ray abdomen AP view: dilated large bowel loops with intraluminal gas and no gas under diaphragm. The patient was managed with one session of emergency dialysis, fluid resuscitation, intravenous (iv) insulin infusion, iv antibiotics (meropenem and doxycycline), and supportive care. The patient responded to treatment with resolution of fever, abdominal pain, distention, obstipation, renal dysfunction, hyperkalemia, and high anion gap metabolic acidosis. Urine and blood cultures were negative after 5 days. The patient was discharged on day 12 of ICU admission.

150. Impact of Using An Extubation Checklist on Extubation Outcomes in a Tertiary Level Medical ICU: A Before After Observational Study (Conference Abstract ID: ABS0150)

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Aim and background: Failed extubation in the ICU is associated with increased mortality and duration of ICU stay. The proportion of extubation failures varies from 10 to 30% in Indian ICUs compared to the international benchmark of about 12%. Currently, decision for extubation is largely driven by clinical assessment by the treating physician and can be subjective. In view of this, a cognitive tool like “Checklist” can be used to make objective clinical decisions, minimise the influence of subjectivity, and may improve outcomes. Currently, there are limited studies on the use of an Extubation checklist in ICU. We evaluated the impact of a Checklist in improving extubation outcomes. Objective: Primary – Rate of extubation failures (Failed Extubations/Total number of Extubations during the period) before and after the introduction of the extubation checklist in the ICU. Secondary – Factors associated with extubation failures among the variables used in the checklist. Materials and methods: A prospective, observational, before-after study was conducted in our tertiary hospital ICU after Institutional Ethics committee approval. The sample size was estimated as 121 extubations in each group based on failed extubation rate reduction from 30% to 15%, power of 80%. Data of patients who were extubated before use of a checklist (April 2020 to November 2020) and after use of checklist were collected, which included – Demographic variables, APACHE 2 score, SOFA score on the day of extubation, Head lift, cough reflex, PF ratios, ventilator data, GCS, sedation score ABG and lab parameters, hemodynamic parameters including lung ultrasound and ECHO were collected. Chi-square tests were used to analyse extubation rates in before-after the study period. Unpaired Student’s t-test and Chi-square test were used to compare variables of patients before and after the introduction of the checklist. Logistic regression was used to predict which variables in the checklist affected extubation outcomes. A checklist was developed from the previous study conducted in Surgical ICU. It was adapted
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Table 1: Comparison of baseline variables before and after use of extubation checklist

<table>
<thead>
<tr>
<th>Variables</th>
<th>Before (N = 171)</th>
<th>After (N = 79)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in years ± SD</td>
<td>48.01 ± 16.44</td>
<td>52.54 ± 14.78</td>
<td>0.0376</td>
</tr>
<tr>
<td>Gender (male)</td>
<td>100</td>
<td>52</td>
<td>0.269</td>
</tr>
<tr>
<td>BMI ± SD</td>
<td>22.42 ± 2.61</td>
<td>22.23 ± 1.96</td>
<td>0.5701</td>
</tr>
<tr>
<td>APACHE II score (mean ± SD)</td>
<td>19.1 ± 8.15</td>
<td>20.24 ± 8.15</td>
<td>0.3332</td>
</tr>
<tr>
<td>Intubation place – ER, ICU, OT</td>
<td>74, 69, 28</td>
<td>41, 23, 14</td>
<td>0.175</td>
</tr>
<tr>
<td>Days on ventilator</td>
<td>5 ± 5.34</td>
<td>4.37 ± 3.75</td>
<td>0.352</td>
</tr>
<tr>
<td>Use of NIV post extubation</td>
<td>28</td>
<td>20</td>
<td>0.095</td>
</tr>
<tr>
<td>Cumulative fluid balance on day of extubation (mean ± SD in mL)</td>
<td>800.07 ± 1552</td>
<td>623.96 ± 1033</td>
<td>0.3625</td>
</tr>
</tbody>
</table>

Table 2: Primary outcome

<table>
<thead>
<tr>
<th></th>
<th>Before introduction of checklist (N = 409/48)</th>
<th>After introduction of checklist (N = 462/42)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failed extubation rate in % (failed extubation/total number of extubation) * 100</td>
<td>11.7</td>
<td>9.09</td>
<td>0.201</td>
</tr>
</tbody>
</table>

for use and its components were modified, based on opinions of local and national experts in Intensive care. The Extubation Checklist was introduced from the period of December 2020 to September 2021. The checklist was used by the treating team to screen patients before extubation. The decision to extubate was left at the discretion of the treating physician. Reintubation was defined as reintubation within 48 hours of extubation. Reintubation rate before and after the introduction of the checklist were collected. Variables in the checklist that were associated with failed extubation were analysed. Checklist usage compliance rates were also calculated. Causes for reintubation during the study period were collected. Results: The failed extubation rate before use of checklist was 11.7% (409 extubations/48 failed extubations) and after the use of checklist was 9.09% (462 extubations/42 failed extubations) (p = 0.201). The checklist was applied in 76.1% of the total number of patients who were extubated. Both groups of patients were comparable with respect to baseline variables (Table 1). There were no statistically significant predictors of extubation failures in the checklist used. Conclusion: The application of an extubation checklist did not significantly reduce the rate of extubation failures in our ICU. However, the rate of extubation failure was comparable with international benchmarks irrespective of the application of the checklist. Further studies with better compliance to the use of a checklist may be needed to clearly establish its utility in improving extubation outcomes.

151. High Flow Nasal Oxygen (HFNO) vs Non-invasive Ventilation (NIV) for Acute Hypoxemic Respiratory Failure (AHRF) in COVID-19

Aim and objective: To study muscle mass loss in critically ill patients in ICU.

Materials and methods: Inclusion criteria: 1. 18- to 80-year-old critically ill patient with sepsis and septic shock. 2. Apache scores > 15. 3. Non-ventilated patients. Exclusion criteria: 1. Patient with Below Amputated Leg. 2. Primary neuromuscular disease. 3. Long-term critically ill patients for >3 months. The ultrasonography method was used to assess the size of major muscles like rectus femoris with the aid of a linear probe (5–10 HZ). Patient placed in supine position with leg straight, toes facing the ceiling, using permanent marker pen a straight line drawn from anterior inferior iliac spine to superior border of patella, midpoint of this line is decreases the rate of intubation when compared with NIV. Settings and design: Single centre, retrospective observational study. Materials and methods: Data collected from medical records. As per the inclusion criteria, patients who received either HFNO or NIV as initial therapy for at least 2 calendar days were analysed. Both the therapies were compared in around 200 patients (HFNO = 100, NIV = 100), with the rate of intubation at day 14 as the primary outcome and length of ICU stay, hospital stay, mortality at day 28, no. of ventilatory free days, complications during ICU stay and comfort score as secondary outcomes. Statistical analysis: Data was done using SPSS software. p value < 0.05 was considered statistically significant. Results: The rate of intubation and mortality rates were higher in the NIV group (P = 0.001), whereas there was no difference in length of hospital or ICU stay among the both (P = 0.15, 0.75, respectively). HFNO group patients were more comfortable (P < 0.05). Conclusion: HFNO is effective in the management of COVID-19 induced acute hypoxemic respiratory failure with a lower rate of intubation, lower mortality rate, and better tolerance compared to NIV though it does not reduce the duration of ICU or hospital stay. Keywords: Acute hypoxemic respiratory failure, COVID-19, High flow nasal oxygen, Intubation rate, Length of stay, Mortality rate, NIV.

152. Observational Study of Muscle Mass Loss in Critically Ill Patients in ICU

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DOI: 10.5005/jp-journals-10071-23712A.152

Aim and objective: To study muscle mass loss in critically ill patients in ICU.

Materials and methods: Inclusion criteria: 1. 18- to 80-year-old critically ill patient with sepsis and septic shock. 2. Apache scores > 15. 3. Non-ventilated patients. Exclusion criteria: 1. Patient with Below Amputated Leg. 2. Primary neuromuscular disease. 3. Long-term critically ill patients for >3 months. The ultrasonography method was used to assess the size of major muscles like rectus femoris with the aid of a linear probe (5–10 HZ). Patient placed in supine position with leg straight, toes facing the ceiling, using permanent marker pen a straight line drawn from anterior inferior iliac spine to superior border of patella, midpoint of this line is
marked and a linear probe is placed gently absolutely perpendicular to the skin, a small muscle placed just above the bone and below the rectus femoris is vastus intermedius. Measurements taken were as follows: 1. Vertical distance of rectus femoris muscle. 2. Vertical Distance of the Vastus Intermedius. 3. Distance between the upper border of the rectus femoris muscle and the upper border of the femur bone (quadriceps femoris muscle thickness). Measurements were taken at the interval of day 3, day 6, day 10. 

**Results:** There was a significant muscle loss after critical illness wherein the rectus femoris muscle showed increased loss after day 7 which was approximately 15% whereas vastus intermedius showed a loss of approximately 10%. It was observed that the muscle wasting was maximum at day 10. 

**Conclusion:** Muscle wasting occurs as a result of extreme stress due to critical illness and increased catabolism and may reflect on the overall prognosis of the patient. This bedside method of usg which is readily available and easy to perform is very helpful in understanding the muscle mass and therefore aid in optimizing the nutritional requirements and thereby reducing the morbidity in critically ill patients.

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**153. Fluid Responsiveness by Carotid Blood Flow: A Prospective, Observational, Single Centre Study** (Conference Abstract ID: ABS0153)

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**Aim and background:** Fluid boluses are the first-line interventions in the management of patients in shock. Fluid boluses are intended to increase cardiac output to improve tissue perfusion. Fluid responsiveness is defined as an increase in cardiac output by 10–15% in response to fluid administration. An increase of cardiac output in response to the passive leg raising test (PLR) is considered to be indicative of fluid responsiveness. Its effects must be measured with direct and real-time measurement of cardiac output, which is often invasive. Minimally invasive techniques such as esophageal Doppler, pulse contour waveform analysis have demonstrated even greater accuracy regarding the prediction of fluid responsiveness.

**Vigileo/Flotrac devices estimate beat to beat cardiac output. Vigileo/Flotrac can however reliably track changes in cardiac output induced by volume expansion. Carotid Doppler shows promise as a non-invasive, reproducible, feasible bedside monitor of carotid output. In this study, it is hypothesized that changes in cardiac output from pulse contour analysis with Flotrac/Vigileo will correlate with the changes in cardiac output derived from carotid blood flow in patients undergoing major abdominal surgery.**

**Objectives:**

**Primary objective:** To study the change in cardiac output derived from carotid blood flow with cardiac output derived from pulse contour analysis for fluid responsiveness. 

**Materials and methods:** It is a single centre, observational time-bound study. Those patients who were received in the ICU post-liver transplant were considered for the study. A passive leg raising test was performed and patients with positive PLR test (rise in cardiac output by >10% by Flotrac) were included in the study. Hemodynamic variables before and after the PLR test were recorded along with cardiac output from Vigileo/Flotrac. Carotid blood flow was measured using a linear probe on the left carotid artery. The patients were administered fluid boluses. The third set of hemodynamic parameters was obtained post fluid bolus.

**Results:** Sixteen patients were included in the study. There is a good correlation between the change in cardiac output with the passive leg raising test derived from carotid blood flow with that of Vigileo ($r = 0.782$). A similar correlation was present between the change in cardiac output at baseline and after fluid boluses ($r = 0.523$) as measured from carotid blood flow and Vigileo. The correlation was somewhat weak in the patients on vasopressor support. The cardiac output measurement derived from carotid blood flow and Vigileo had a good correlation with each other, before PLR ($r = 0.843$), after PLR ($r = 0.904$), and post fluid bolus ($r = 0.790$).

**Conclusion:** Change in carotid blood flow as measured by ultrasound correlated with change in cardiac output derived from Vigileo. Further studies are needed to validate carotid blood flow derived cardiac output and changes in it as a surrogate for cardiac output from minimally invasive methods.

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**154. Quadriparesis after COVID-19 Vaccination: Two Cases with Different Diagnosis** (Conference Abstract ID: ABS0154)

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**Aim and objective:** During the recent COVID-19 pandemic various vaccines have been developed and approved for emergency use, including adenovirus vector-based ChAdOx1 nCov-19. There are few reports of serious adverse events following immunization (AEFI). 

**Materials and methods:** Here, we report two cases of serious AEFI who required ICU admission. 

**Results:** Case 1: A 55-y-m hospitalized with complaints of giddiness for 4 days and onset of weakness of all four limbs with altered sensorium for 1 day. He had no history of any comorbidity, non-smoker and non-alcoholic, and no previous episodes of transient ischemic attacks. He was vaccinated with a second dose of adenoviral vector-based ChAdOx1 nCov-19 vaccine (8 days before the onset of first symptoms). After hospitalization, immediate intubation was done for airway protection. His neurological examination revealed blinking of eyes spontaneously, motor power of 0/5 in all four limbs, deep tendon reflex of +2, and mute plantar. MRI Brain was done on the next day (day of illness, DOI-4), which revealed acute infarct in the pons and bilateral cerebellar hemisphere. He was referred to our ICU on DOI-12. Repeat MRI Brain on DOI-16 showed subacute infarcts in the pons, bilateral middle cerebellar peduncles, and left cerebral hemisphere with thrombosed basilar artery. Lipid profile, homocysteine levels, auto-immune work-up were normal. Echocardiography showed normal LV function with no evidence of LA clot. Carotid Doppler showed normal carotid vessels. In view of ischemic stroke and basilar artery thrombosis anti-platelet agent and therapeutic anticoagulation continued. Over the next 3 weeks, he showed gradual improvement in motor power (3/5 in upper limbs and 2/5 in lower limbs) and weaned off from mechanical ventilation.

**Case 2:** A 19-y-m hospitalized with...
complaints of acute onset paraesthesia and progressive weakness in both lower limbs for 4 days and difficulty in speech and swallowing for 1 day. He had no history of any comorbidity, and no history of preceding viral/bacterial infection except that he had received the first dose of the adenoviral vector-based ChAdOx1 nCov-19 vaccine (16 days before the onset of first symptoms). After hospitalization, he required intubation in view of pooling of oral secretions and respiratory distress. Clinical examination revealed bifacial weakness, severe neck muscle weakness, and flaccid areflexic quadriaparesis with prominent proximal upper and lower limb weakness. Pin-prick sensation was distally reduced in both lower limbs with associated autonomic instability in the form of tachycardia and hypertension. MRI Brain was normal in the study. In further work, Guillain–Barré syndrome (GBS) was diagnosed. CSF showed albumin-cytologic dissociation (protein 1.14 g/L and nil cell), and bilateral motor nerve axonal neuropathy on nerve conduction study. Immunoglobulin (IVIG) therapy was started on DOI-6. He did not show significant axonal neuropathy on nerve conduction study. Immunoglobulin MRI Brain was normal in the study. In further work, Guillain–Barré autonomic instability in the form of tachycardia and hypertension.

sensation was distally reduced in both lower limbs with associated severe neck muscle weakness, and flaccid areflexic quadriaparesis with prominent proximal upper and lower limb weakness. Pin-prick sensation was distally reduced in both lower limbs with associated autonomic instability in the form of tachycardia and hypertension. MRI Brain was normal in the study. In further work, Guillain–Barré syndrome (GBS) was diagnosed. CSF showed albumin-cytologic dissociation (protein 1.14 g/L and nil cell), and bilateral motor nerve axonal neuropathy on nerve conduction study. Immunoglobulin (IVIG) therapy was started on DOI-6. He did not show significant axonal neuropathy on nerve conduction study. Immunoglobulin MRI Brain was normal in the study. In further work, Guillain–Barré autonomic instability in the form of tachycardia and hypertension.


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Aims and objectives: Critically ill patients require venous access devices like peripheral intravenous catheters (PIVC), central venous catheters (CVC), and haemodialysis (HD) ports. The maintenance of these devices is of paramount importance to prevent potential secondary sepsis (bloodstream or skin and soft tissue infections) in vulnerable patients. The primary objective of this quality improvement project was to study the effect of intensive training and education of healthcare workers (HCW) on the maintenance of venous access devices. The secondary objectives were to observe the effect of this intervention on reduction in the incidence of central line-associated bloodstream infection (CLABSI) and on improvement in documentation regarding devices.

Materials and methods: After approval of the Institute Ethics committee (NK/6491/MO/147) and registry in clinicaltrials.gov (NCT04692753), the study was conducted from October 2020 to April 2021. During phase 1 (3 months, pre-intervention), 25 pre-defined random visits to the intensive care unit (ICU) were made and point observations regarding maintenance of all in situ venous access devices in all patients in ICU on the day of visit were made. The observations included a condition of the site, connectors, dressing, fixation of venous access devices, any attached unused iv sets, and knowledge of HCW regarding the indication of device placement. The observations were categorized as appropriate or inappropriate practices based on ASA guidelines for CVC 2020, INICC guidelines for PIVC 2017, and ACQHCS for PIVC and haemodialysis ports, December 2019. The monthly incidence of CLABSI and documentation practices (device insertion, dressing date) were also recorded. In phase 2 (1 month, intervention), intensive training and education of HCWs were done as demonstrations, discussions, and knowledge assessment (online and offline). In phase 3 (3 months, post-intervention) similar observations were taken during phase 1. All observations categorized as appropriate were compared between the pre-and post-intervention phase. Results: A total of 127 and 139 PIVC; 144 and 151 CVC and 10 and 21 HD port observations in the pre- and post-intervention phase were made, respectively. The maintenance of PIVC improved significantly in terms of condition of site (from 82.7% to 98.1%, p < 0.05); condition of connectors (45.7% to 56.8%, p < 0.05) and no attached unused iv sets (90.5% to 98.56%, p < 0.05). However, condition of dressing showed no improvement (9.4% to 15.8%, p > 0.05). For CVC maintenance, there was significant improvement in condition of insertion site (66% to 94%, p < 0.01); condition of connectors (0% to 44.37%, p < 0.01); fixation (91% to 99.3%, p < 0.05); no attached unused iv sets (38.9% to 97.3%, p < 0.01) and knowledge of HCW (96.52% to 100%, p = 0.05). No improvement was observed in condition of dressing (p > 0.05). For HD ports, no significant improvement was observed in any of the parameters. There was no significant difference in the incidence of CLABSI between the two phases (15.7, 9.8, 18.1 in pre-intervention and 37.7, 22.3, 6.5 per 1000 catheter days in the post-intervention phase, p = 0.49). The documentation practices showed significant improvement only for CVC (38.2% to 67.7%, p < 0.01). Conclusion: The study showed significant improvement in the maintenance of PIVC and CVC after intensive training and education of HCWs. Although this improvement did not translate into improved CLABSI incidence.

156. Atypical Clinical Presentations of Pulmonary Thromboembolism to the Emergency Department: High Index of Suspicion and Application of Diagnostic Approach (Conference Abstract ID: ABS0156)

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DOI: 10.5005/jp-journals-10071-23712A.156

Aim and background: Acute pulmonary thromboembolism is the most serious clinical presentation of venous thromboembolism with fatal pulmonary thromboembolism (PTE) being a common cause of sudden death. In yesteryears of practicing clinical medicine, PTE was the most common cause of unexplained sudden deaths in hospitalized patients. However, our understanding of the disease has improved with time and the growth of clinical scores, laboratory evidence, and radiographic scans. In few of the patients, the diagnosis is still missed and these are the nightmarish cases for the emergency physician. Especially after the second wave of the COVID pandemic, many patients presented to the emergency department (ED) even without any risk factors for pulmonary thromboembolism. Diagnosing patients without risk factors for PTE is quite challenging and suspicion of PTE should be kept in the differential diagnosis if patients are presenting with uncommon
clinical history and examination. **Objective:** To decrease the incidence of missed diagnosis of PTE in ED. **Materials and methods:** The study was conducted using ED records of patients who had a confirmed diagnosis of PTE on CT pulmonary angiography (CTPA) between March and September 2021. COVID-19 infection was ruled out at the time of presentation to ED using a rapid antigen test and subsequently with RT PCR within the next 24 hours. The presenting complaints, past history of COVID-19 infection and COVID vaccination, WELLS score, ECG, CXR, ABG, D dimers, bedside echocardiography, and results of CTPA were collected and tabulated. The symptoms were divided into 2 groups – typical and atypical. Group I with typical symptoms studied patients who presented with acute onset of dyspnea, chest pain, and cough without expectoration. Group II with atypical symptoms included patients who presented with hemoptysis, wheeze, cerebrovascular accident, syncope, arrhythmias, and acute onset of delirium. The null hypothesis was that atypical symptoms of PTE make the diagnosis difficult (late) and have a poorer prognosis. **Results:** The comparative analysis with descriptive statistics will be presented at the conference. In Group II patients, three parameters were clinically significant enough to early diagnosis of PTE. These were sinus tachycardia on ECG, raised D dimers, and a low TAPSE on echocardiography. TAPSE or tricuspid annular plane systolic excursion with a cutoff <1.7 cm was found to be highly specific in our study. **Conclusion:** Acute pulmonary embolism can be a complex interplay between several different symptoms and between different organs that can lead to a potentially life-threatening cardiovascular condition that may be difficult to diagnose. The differential diagnosis of PTE should be kept in mind if a patient presents with rare clinical findings. Detailed physical examination, Wells-scoring, D dimers, and point of care ultrasonography (POCUS) examination are very crucial in diagnosing the patient. Working in this approach will decrease the incidence of missed diagnoses.

157. Is Gastric Evacuation Using Nasogastric Tube Needed Before Planned Tracheal Extubation in Critically Ill Patients? Role of Gastric Ultrasound (Conference Abstract ID: ABS0157)

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**Aim and background:** Pre-extubation fasting and the evacuation of gastric contents using a nasogastric (NG) tube is often practiced in critically ill patients to protect the lungs from the risk of aspiration. Gastric ultrasound (GUS) is an excellent bedside modality to assess the gastric volume and content before planned tracheal extubation and may predict the risk of aspiration and the need for NG suction. **Objectives:** Primary objective was to determine the prevalence of various stomach grades using the Perlas three-point grading system on GUS assessment before tracheal extubation in critically ill patients receiving enteral nutrition without pre-extubation fasting. Secondary objectives were to assess the need for gastric evacuation using NG following GUS assessment and also the incidence of aspiration pneumonitis. **Materials and methods:** A prospective observational pilot study was conducted after local ethics committee approval and prospective trial registration (CTRI/2020/10/028749) in adult critically ill patients who were either on mechanical ventilation (pressure support mode) or on T-piece trials and were receiving enteral feeding for duration of >48 hours before extubation and were eligible for elective extubation in a mixed medical-surgical ICU at government teaching institute in India. All patients were receiving 100–150 mL bolus enteral feeding intermittently every 2 hours through an NG tube and were electively extubated during the daytime after ICU grand round. Trained intensivists performed GUS using a curved abdominal probe in all enrolled patients in semi-recumbent and right lateral decubitus (RLD) positions. Qualitative and quantitative assessment of gastric contents was performed and the need for gastric evacuation was assessed based on a decision algorithm. Following elective tracheal extubation, all patients were followed up for the next 48 hours to detect aspiration pneumonitis based on predefined diagnostic criteria. SSFS version 25.0 was used to perform descriptive statistics. **Results:** Twenty critically ill patients were enrolled. The mean age and body mass index of this cohort were 42.5 (±6.5) years and 26.8 (±2.9), respectively. 65% were males and community-acquired pneumonia with sepsis was the most common diagnosis (75%). Mean ICU LOS was 11.2 (±4) days and the mean duration of mechanical ventilation use was 8 (±2.4) days. GUS was feasible in all patients; 50% of the patients had grade zero gastric content and hence did not require NG suctioning. 30% of the patients were assessed to have grade 1 gastric content with the antral cross-sectional area (CSA) <3.4 cm². NG suctioning was performed in only 20% of patients, among which, 15% of patients showed grade 1 gastric content with CSA >3.4 cm². The mean volume of NG aspirate was 155.2 (±21.3) mL. All tracheal extubation were successful. No patient developed signs of aspiration pneumonitis. **Conclusion:** Based on gastric ultrasound assessment, the majority of ICU patients (80%), without pre-extubation fasting, did not require NG suctioning before tracheal extubation. No patient developed signs of aspiration pneumonitis. A further large observational study is required to confirm the findings of this preliminary study.

158. Outcomes of COVID-19 ARDS on VV ECMO in a Tertiary Care Hospital in Kerala: A Case Series (Conference Abstract ID: ABS0158)

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**Introduction:** Acute respiratory distress syndrome (ARDS) is associated with high mortality despite the use of low-volume, low-pressure ventilation strategies that are aimed at reducing ventilator-induced lung injury. Initiation of ECMO for adult ARDS should be considered when conventional therapy cannot maintain adequate oxygenation. ECMO can stabilize gas exchange and haemodynamic compromise, consequently preventing further hypoxic organ damage. Here, we present a case series of COVID-19 ARDS who were put on VV ECMO in a tertiary care hospital in Kerala and their primary and secondary outcomes. **Aims and objectives:** The primary outcome is to determine the 28-day mortality from all causes in all COVID-positive patients put on VV ECMO till date. The secondary outcome is the incidence of ventilator-associated pneumonia (VAP) and acute kidney injury (AKI) in all COVID-positive patients put on VV ECMO. **Materials and methods:** Retrospective continuous case series. Retrospective data were collected from all COVID-positive patients who were put on VV ECMO till date in the...
hospital and the primary and secondary outcome was analyzed. Results: The mean duration from onset of dyspnea to initiation of ECMO was 11 days. The mean duration of ECMO for a patient was 7 days 19 hours. Out of 14 patients, 9 patients expired within 28 days of initiating ECMO (64.2%). Out of these, 2 patients were weaned off ECMO but died later. 2 patients died due to intracranial haemorrhage while on ECMO. Of all the patients put on ECMO, 6 patients had VAP complicating the course of ECMO (42.8%). Of the organisms isolated, 2 patients had MDR Acinetobacter, 2 patients had MDR Klebsiella, 1 patient had MDR Acinetobacter, MDR Pseudomonas and MDR Klebsiella, and one patient has Aspergillus sp. Of the total patients, 7 had AKI during the course of ECMO as defined by KDIGO criteria (50%). Of these, 4 had to undergo at least one session of dialysis while the others were managed conservatively. Conclusion: The 28-day mortality was higher than an international multi-centric trial done by De Troy et al. probably because of late referrals to our hospital after many days of NIV and high oxygen requirement. VAP complicated the course of ECMO in many patients which emphasizes strict infection control practices in patients on ECMO. AKI was found in half of the patients and was usually secondary to sepsis. Keywords: ECMO, COVID-19, ARDS.

159. Melioidosis: A Case Series of Confirmed Burkholderia Pseudomallei Among Young Diabetic Males in North India (Conference Abstract ID: ABS0159)

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Melioidosis is an infectious disease caused by gram-negative saprophytic bacteria Burkholderia pseudomallei, which is endemic in Southeast Asia and northern Australia. It has a high case fatality rate of 16–50% and is classified as a category B bioterrorism agent. In India, the disease is more prevalent in Karnataka, Kerala, and Tamil Nadu with sporadic cases in north India. Environmental conditions, the high burden of diabetes, the alcoholic population, and rural settings make India more vulnerable to Melioidosis. Moreover, limited awareness of the disease, lack of well-equipped microbiological laboratories and trained professionals, variable clinical presentation lead to misdiagnosis and inappropriate treatment causing higher mortality. We present three cases of melioidosis, effectively managed by our team, with severity ranging from moderate to disseminated disease. All three patients had uncontrolled diabetes. Case 1: A 26-year-old male presented with fever, abdominal pain, and shortness of breath associated with decreased appetite along with signs of septicemia. Further workup showed multiple deep-seated abscesses involving liver and spleen, and bilateral pneumonia. The pus culture from the liver abscess showed B. pseudomallei, patient was treated and discharged to home after 7 days of ICU and a total of 12 days of hospital stay. Case 2: A 33-year-old male, known alcoholic for 8 years, presented with fever, non-healing skin ulcer, bilateral knee pain, breathlessness, and altered mentation. Further workup showed multiple liver and splenic abscess, bilateral septic arthritis of knee joint and pneumonia with hypoxic respiratory failure. This patient developed multi-organ dysfunction syndrome and needed mechanical ventilation. The patient family took LAMA, due to financial concerns. Case 3: A 53-year-old male presented with fever, abdominal pain, decrease appetite, and history of non-healing liver and splenic abscess from 1 year. He was initially treated on line of pyogenic liver abscess and then taken over on anti-tubercular treatment. When he visited our centre, pus aspiration was done and culture showed growth of B. pseudomallei. The patient was started on antibiotic therapy and discharged in stable condition after 2 days of hospital stay. Melioidosis is a non-notifiable disease and is not included in Integrated Disease Surveillance Program by the National Center of Disease Control. India is predicted to have the highest burden of disease with an estimated mortality of 32,000 per year. The only source of disease burden in India is a few case reports although the true burden and distribution of disease still need to be assessed. To control this emerging disease, we need to improve the awareness among clinicians through training programs, workshops, and conferences along with establishing good microbiological testing laboratories with the hope of early detection, timely management, and improved outcomes.

161. A Study on Secondary Infections in Patients with COVID-19 Admitted to ICU (Conference Abstract ID: ABS0161)

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Introduction: COVID-19 is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which has resulted in 119.2 million infections and 2.64 million deaths by 14 March 2021, globally. As of March 14, 2021, India has seen 11.35 million infections and 0.15 million deaths. Critically ill COVID-19 patients need hospitalization, which increases their risk of acquiring secondary bacterial and fungal infections and would lead to a significant increase in morbidity and mortality. The prevalence of secondary infections in ICU patients infected with COVID-19 is not well understood. Objectives: The aim of our study was to know the prevalence and impact of secondary infections on patients with COVID-19 infection admitted to ICU. Materials and methods: This was an observational prospective study conducted in Apollo hospital, for a period of 6 months (December 2020 to June 2021). We considered patients who develop secondary infections (bacterial/fungal) developed 48 hours after ICU admission until death or discharge. Results: Among 50 patients, males were 68% and females were 32%. The mean age at presentation was 55 years. Secondary infections were detected in 29 patients (58%) with a median of 9 days after intensive care unit (ICU) admission (Fig. 1). Among which 79.3% was bacterial and 20.7% was fungal infections. Most of which were isolated from blood-16/29 patients (55.2%), respiratory-9/29 patients (31.03%), and urine-4/29 patients (13.8%). Gram-negative organisms were predominant [Klebsiella (39.1%), Acinetobacter (26.1%), E. coli (17.4%), Pseudomonas (13.0%)] over gram-positive organisms-enterococci (4.4%). Among fungal infections, Aspergillus in 3/6 patients (50%), Mucor in 1/6 patients (16.7%), and Candida in 2/6 patients (33.3%) were noted. The average length of ICU stay in patients with secondary infections was significantly high when compared to patients without secondary infections.
Aim and background: Sepsis in 2017 redefined as “life threatening organ dysfunction caused by dysregulated host response to infection” and septic shock is a life-threatening condition with underlying circulatory and cellular/metabolic abnormalities. Despite current standard treatment morbidity and mortality remains high. No adjunctive therapies for septic shock have been shown to improve survival. Additional interventions to improve the patient outcomes for septic shock thus need to be researched and developed. 

Objective: Evaluate the effects of early combination therapy with intravenous Vitamin C and Thiamine on recovery from Organ Failure (Conference Abstract ID: ABS0162)

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**Conclusion:** For critically ill COVID patients, the secondary infection rates were found to be high. Although antibiotics likely provide minimal benefit as empirical treatment in COVID-19 patients and may be associated with unintended consequences including adverse events, toxicity, resistance, and *C. difficile* infections, it is always prudent for clinicians to prescribe them judiciously to ICU patients to reduce the length of ICU stay and mortality. We must have a high suspicion for fungal infections in patients who have long ICU stays and not improving with empirical antibiotics, as early detection and timely treatment may reduce mortality (Figs 2–4). **Keywords:** Antibiotics, Bloodstream infections, COVID-19, Lower respiratory tract infections, Secondary infections.

162. Evaluate the Effects of Early Combination Therapy with Intravenous Vitamin C and Thiamine on Recovery from Organ Failure (Conference Abstract ID: ABS0162)

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**Aim and background:** Sepsis in 2017 redefined as “life threatening organ dysfunction caused by dysregulated host response to infection” and septic shock is a life-threatening condition with underlying circulatory and cellular/metabolic abnormalities. Despite current standard treatment morbidity and mortality remains high. No adjunctive therapies for septic shock have been shown to improve survival. Additional interventions to improve the patient outcomes for septic shock thus need to be researched and developed. **Objective:** Evaluate the effects of early combination therapy with intravenous vitamin C and thiamine on recovery from organ failure, as indicated by changes in the SOFA score during the first 72 hours in patients with septic shock. **Secondary aim:**

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**Fig. 1:** No. of sec. infections noted.

**Fig. 2:** Shows % of bacterial and fungal infections among secondary infections.

**Fig. 3:** Shows organisms isolated among total secondary infections.

**Fig. 4:** Shows % of mortality among the study population.
To evaluate the effect of the multiple other clinical parameters including but not limited to hospital length of stay, ICU length of stay, 14-day mortality, 30-day mortality, need for vasopressor support, need for RRT, etc. **Materials and methods:** Study site: Intensive Care Unit, Ruby Hall Clinic. **Study population:** Patients admitted in ICU with septic shock for <24 hours. **Study design:** A prospective, randomized, controlled study. **Sample size:** 100 patients will be randomly assigned in a 1:1 ratio to either the intervention group or control group. **Procedure:** For intervention group, vitamin C (50 mg/kg, max single dose 3 g, daily dose 6 g) and thiamine (200 mg) in 100 mL 0.9% NS over 1 hour every 12 hours for 72 hours and control group will not receive vit C and thiamine. **Results and conclusion:** Data collection is complete and results and conclusion will be ready by November 2021.

163. Acute Necrotising Encephalitis: A Rare Neurological Complication of H1N1 Pneumonia in Adults: A Case Report (Conference Abstract ID: ABS0163)

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**Aim and objective:** Acute necrotizing encephalopathy (ANE) is a well-defined but rare complication of H1N1 influenza infection, characterized by high morbidity and mortality rates. We report a case of ANE secondary to H1N1 influenza infection in a middle-aged woman, with a favourable response to immunosuppression and neuroprotective measures. **Background:** influenza is an acute, often self-limited, febrile illness with predominant respiratory symptoms caused by infection with influenza virus A or B. Although primarily considered a viral infection of the respiratory system, influenza virus infections have been associated with a number of atypical clinical presentations and extrapulmonary complications. These include neurological complications (influenza-associated encephalopathy, GBS, transverse myelitis), cardiovascular complications (myocarditis), musculoskeletal complications (myositis, rhabdomyolysis) as well as those involving renal, hepatic, hematological, and endocrine systems. Influenza-related neurological manifestations are uncommon among adults and are usually described in the paediatric population. However, since the emergence of the novel pandemic H1N1 (2009), influenza infections have been linked with more frequent and more severe neurological complications and there has been a surge in its incidence among the young and otherwise healthy adult population. **Case:** Here, we report a rare case of ANE secondary to an H1N1 influenza infection which had a favourable outcome after intensive care treatment and subsequent neurorehabilitation. The patient was diagnosed with bronchopneumonia with ARDS on admission and was initially managed with NIV but rapidly progressed to worsening hypoxia, requiring invasive mechanical ventilation and significant hemodynamic support. On day 15, she was noted to have developed altered sensorium and right-sided hemiplegia. Brain imaging revealed hemorrhagic infarcts and features suggestive of necrotizing encephalitis. She was managed with antivirals, high-dose corticosteroids, and neuroprotective measures. Over a period of time, her condition improved and was discharged with minimal residual disability. On follow-up, she was able to ambulate without support. Early identification and institution of appropriate therapy are critical for warranting better outcomes in ANE. Our case typifies the rare but serious neurological complication of ANE associated with influenza (H1N1) infection. There is mounting evidence that ANE is not caused by direct viral invasion of the CNS but instead may represent a consequence of the host immune response to the virus. Influenza A virus-associated encephalopathy (IAE) always presents a diagnostic dilemma for neurologists and is difficult to distinguish from other infective and metabolic causes. Early recognition, evaluation, diagnosis, and appropriate management with continued supportive care led to better outcomes in our patient. **Conclusion:** The neurologist and neurointensivist have a role in epidemiologic surveillance and, therefore, should be aware of influenza-associated neurological complications like ANE to correctly and timely substantiate the diagnosis and manage appropriately. Two key points our case illustrates: (1) A diagnosis of ANE should be considered in patients with a recent history of respiratory tract illness with acutely progressive neurological deficits. (2) The non-specific signs and the use of sedatives and neuromuscular blockade in ARDS patients makes the diagnosis of ANE, especially challenging and therefore strong clinical suspicion and regular neurological examination are crucial for early identification.

164. Delta PaO2 Trend in Predicting Mortality in Severe ARDS (Conference Abstract ID: ABS0164)

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**Aim and background:** Management of ARDS has been a challenging task in critically ill. Since the seminal work of ARDS NET TRIAL, there has been hardly any improvement in mortality, rates remaining between 34.9% and 40%, depending on severity. Proning maneuver is accompanied by a marked improvement in arterial blood gases, which is mainly due to a better overall ventilation/perfusion matching. Improvement in oxygenation and reduction in mortality are the main reasons to implement prone position in patients with severe ARDS. The main reason explaining a decreased mortality is less overdistension in non-dependent lung regions and less cyclical opening and closing in dependent lung regions. **Objectives:** To see if the trend of delta PaO2 predicts mortality in proned ARDS patients.

**Materials and methods:** PaO2 in ABG before and after 12 hours of proning was documented, difference between the two PaO2 was labelled-delta PaO2. Trend of increasing or decreasing delta PaO2 outcome measured, and death or discharge, studying if the trend is helpful in predicting mortality. **Results and conclusion:** Analysis of results are ongoing, will be presented in detail at the main event.

165. Molecular Diagnostics vs Standard Microbiologic Cultures! Is it worth the price difference? (Conference Abstract ID: ABS0165)

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**Aim and background:** Rapid detection of bacterial pathogen and determination of antimicrobial susceptibility profile is crucial, as timely administration of appropriate antibiotic is key in treating an infection. However, the gold standard for bacteriological
documentation of infection remains to be culture-based methods. Certainly, it takes about 48 hours for the culture reports, failure of detection of the pathogen exists from several reasons like administration of antibiotic before drawing blood culture, infection with atypical organism. The main advantage with Bio fire Film array is the rapid turnaround time and resistance genes which helps in escalation and de-escalation of antibiotics rather than waiting for 48 hours to get culture and antimicrobial sensitivity report with minimum inhibitory concentration values, which sometimes need additional testing like Carbapenemases. Thus, we planned to study the role of Bio fire film array in early initiation and de-escalation of antibiotics. Identify mono and polymicrobial infections, which is more easily identified with Bio fire rather than cultures especially when they have different resistance patterns in a polymicrobial infection. Analyse follow-up cultures and laboratory parameters which include whether total leucocyte count or C-reactive protein to check for the accomplishment of microbiological clearance and clinical cure of the infection. Outcomes measured as discharge from ICU and hospital, or death are also studied. Antibiogram data about the incidence of infections, resistance patterns in our institute. Materials and methods: Prospective analysis of Bio fire Film array PCR and Standard microbiologic cultures in better antibiotic stewardship, reaching microbiologic and clinical cure and reducing health care costs. All the data are drawn from the electronic medical records of the hospital. We analysed data of 100 patients whose sputum, endotracheal or bronchoalveolar lavage samples have been sent for Bio fire film array pneumonia panel assay and standard culture. Results and conclusion: Among the 50 patients studied so far, 27 (54%) patients attained both microbiologic clearance and clinical cure with 5–7 days of therapy and all were discharged out of ICU subsequently. 4 patients among this group expired with other infections. 13 (26%) patients attained either microbiologic clearance or clinical cure with 5–7 days of therapy, among them 6 patients expired. 10 (20%) patients did not achieve either microbiologic clearance or clinical cure and succumbed to death. In detail analysis of the remaining samples, and all the objectives and conclusions will be presented at the main event.

166. Psychological Impact of Second Wave of Pandemic among Doctors, Nursing And Paramedical Staffs Posted for Treating Critically Ill Patients of COVID-ICU: A Retrospective Analytical Study (Conference Abstract ID: AB50166)
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Aim and background: As compared to the first wave of the COVID-19 pandemic the second wave had more impact on the health care systems. During the second wave the most common observation among critical health care providers was significant emotional intricacy. Since these health care providers of COVID-ICU were at risk of infection, some degree of psychological stress like depression, anxiety, and stress were experienced by them. Additionally, government-imposed lockdown had also augmented psychological impacts. Objective: The objective is to perform a retrospective analytical study to measure the change of psychological impact during the second wave of the pandemic among doctors, nursing, and paramedical staff posted for treating critically ill patients of COVID-ICU by using the Depression, Anxiety and Stress Scale (DASS-21). Materials and methods: All critical health care providers posted in COVID-19 ICU were entitled to involve in this study. The study was approved by the institute ethical committee (Letter No: 183/IEC/IGIMS/2021 dated 26.06.2021). Data were prepared telephonically obtained feedback as well as duly filled received Proforma of DASS-21 Scoring Instructions from the duty doctors, nursing and paramedical staffs posted for treating critically ill patients of COVID-ICU, where 21 items of questionnaires were asked. Results: One hundred seventy-one critical health care providers had participated (103 women, 68 men) in the study, who responded to the online as well as an offline survey. Participant mean age was 36.4 years. Out of the 171 complete responder 52 (30.4%) doctors, 71 (41.5%) nursing staff, and 48 (28.1%) paramedical staff were participated. During this study in general, 45 (26.3%) participants reported moderate to extremely severe depression, 49 (28.6%) reported moderate to extremely severe anxiety, and 41 (24.0%) reported moderate to extremely severe stress scores. Mean ± standard deviation values of DASS-21 depression, anxiety and stress scores amongst female vs male were 7.0 ± 3.2 vs 6.1 ± 5.2 (p < 0.004), 6.5 ± 6.1 vs 4.9 ± 5.8 (p < 0.001), and 13.2 ± 8.1 vs 11.3 ± 8.9 (p < 0.001), respectively. After correcting the significant confounders, clinical apprehensions associated with elevated DASS-21 scores comprised not being clinically prepared (p < 0.001), a scarce staff (p < 0.001), having to triage patients due to shortage of COVID-19 ICU beds and/or equipment (p < 0.001), COVID spread to companions and relatives (p < 0.008) being accountable for other staff members (p < 0.001), and being solicited to do the job in a region that was not in their capability (p < 0.001). Conclusion: Critical care health professionals had elevated echelons of psychological symptoms during the second wave of the COVID-19 pandemic. Timely keeping an eye on them for caring for all such symptoms is a demand of time.

Keywords: Anxiety, COVID-19 pandemic, DASS-21, Depression, Second wave, Stress

References

167. A Study to Evaluate the Role of Serum Lactate as a Biomarker of Pediatric Shock (Conference Abstract ID: ABS0167)

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Aim and background: Although blood lactate concentrations have an established prognostic value in circulatory shock, their relationship with hemodynamic instability has not been consistently established. We hypothesized that lactate is not a reliable marker of hemodynamic instability. Our objective was to study the relationship between lactate levels and degree of hemodynamic instability and thus to explore the role of serum lactate as a biomarker of pediatric shock and also to study the profile of metabolic acidosis and their outcome in children with shock. 

Materials and methods: This is an observational study with both retrospective and prospective components, carried out in a multidisciplinary PICU of a tertiary care children's hospital. All children 1 month to <18 years diagnosed with shock were included in the study. The prospective component of the study was started from July 2020 and was continued till June 2021 and for the retrospective component data was collected from the medical records from June 2019 to June 2020. Results: A total of 60 children with shock were identified. Out of 60 patients with shock, only 53% of patients mounted hyperlactatemia, and 45% of patients mounted lactic acidosis, SIG acidosis was seen in 25%, hyperchloremic acidosis in 15%, and 15% children with shock did not mount any acidosis. 30% of patients presented with compensated shock and the remaining 70% in decompensated shock. Septic shock accounted for a maximum number of compensated shock cases; dengue shock accounted for a maximum number of decompensated cases. Dengue shock accounted for 21 (35%) cases, followed by septic shock in 19 (31.6%) cases and MISC shock in 11 (18.3%) cases, cardiogenic shock was seen in 7 (11%) cases and other types of shock included two cases, one case of haemorrhagic shock, and one case of acute gastroenteritis with severe dehydration. Dynamic lactate indices at various time points (Lac0, LacMHI, Lac24) were significantly higher among non-survivors than survivors. There was a moderate positive correlation between dynamic lactate indices (Lac0, LacMHI, Lac24) with a degree of hemodynamic instability which was reflected by vasoactive infusion score with a Pearson correlation coefficient (*r*) of 0.56 (*p* < 0.001), 0.59 (*p* < 0.001), and 0.53 (*p* = 0.002) at admission, at the time of maximum hemodynamic instability and at 24 hours from the initial diagnosis of shock, respectively. Conclusion: Hyperlactatemia (>2 mmol/L) was not found in 46.6% (28/60) of children with shock despite hemodynamic instability, but the presence of lactic acidosis portends a poor prognosis in children with shock in terms of greater organ dysfunction (higher SOFA score), acute kidney injury, and greater need of mechanical ventilation and greater mortality. Therefore, we conclude that hyperlactatemia is not a universal finding in children with shock and hence lacate is not a reliable marker of hemodynamic instability.


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Aim and background: The first case of Japanese encephalitis viral disease (JE) was documented in 1871 in Japan. Japanese encephalitis (JE), is a mosquito-borne zoontic viral disease caused by a virus, was first recognised in India in 1955. The number of patients with JE aged over 15 years has been on the rise in the last few years. Adults have been reported to be more vulnerable with a higher mortality rate in an outbreak. Objective: Japanese encephalitis (JE) is a critical problem of public health worldwide. However, there are limited data about the clinical features and indicators of outcome in adult patients though a lot of research has been focussed on paediatric population with severe Japanese encephalitis. 

Materials and methods: We collected data retrospectively of the patients who were admitted to the critical care unit and were diagnosed with Japanese Encephalitis. Over a period of 2 months from 1.8.2021 to 31.9.2021, we found 5 cases of Japanese Encephalitis. We analysed the clinical presenting features, length of stay, course of illness, and the outcome of the cases. One patient got discharged from our hospital and was followed up telephonically. Three patients were discharged against medical advice as requested by their relatives to transfer them to other centres and they were followed up.

Results: Out of 5 patients, only 1 person survived but was neurologically debilitated even after 30 days post-discharge (modified Rankin score of >4). The average length of hospital stay was 9.8 ± 1.3 days. The initial SOFA score was >7 in all the patients with an average of 9.8. The higher mortality rate was attributed probably to the higher SOFA score at the admission of these patients. One patient died during the treatment. One patient got discharged from our hospital but on telephonic follow-up, was found to have neurological sequelae which was characterised by mRS score of >4. Three patients were discharged against medical advice as requested by their relatives to transfer them to other centres due to personal reasons and they were followed up till their death. Clinical symptoms vary among different patients, however, the most common ones were fever (80%), headache (60%), altered sensorium (100%), vomiting (40%), and seizure (40%). Conclusion: Japanese Encephalitis is an endemic disease of the eastern part of India having severe morbidity and mortality rate of around 80% if presented late. Patients have a very poor prognosis when presented late. However, further studies need to be done to have detailed analysis in a larger sample size in adults.


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Aims and objectives: To establish that non-invasive ventilation (NIV) can be substituted by high flow nasal cannula (HFNC) for respiratory support during oral feeding of a patient with COVID-19 patients.

Materials and methods: This prospective case series was
conducted after taking informed and written consent from the patients. Ten patients with severe COVID-19 disease requiring NIV with inspiratory pressure of <10 cm H$_2$O, positive end-expiratory pressure of <6 cm H$_2$O and FiO$_2$ <0.6 were included in this study. Patients with altered consciousness, circulatory failure, or worsening acidosis were not included in the study. Patients underwent HFNC trial for 10 minutes and were screened for risk of dysphagia and aspiration using a 3-ounce water swallowing test. The patients were given a trial of HFNC for 10 minutes with a flow of 60 L/minute and FiO$_2$ of 0.1 more than their requirement on NIV. The patients were observed for hypoxemia (SpO$_2$ <88%) or signs of respiratory distress, e.g., increase in respiratory rate (>35/minute), laboured breathing pattern, use of accessory muscle of respiration, heart rate (>20% change), blood pressure (>20% change), perspiration, and anxiety. Then, HFNC was used for supporting respiration during oral feeding for up to 20 minutes. Feeding was started with a hypocaloric target on starting day and was increased progressively as per European Society for Clinical Nutrition and Metabolism guidelines to the target estimated caloric requirement. Results: The HFNC support for oral feeding was successful with adequate diet intake in eight patients without desaturation/respiratory distress during oral feeding. Other than COVID-19, co-morbidities in these eight patients included diabetes mellitus, obesity, chronic obstructive pulmonary disease, coronary artery disease, and dilated cardiomyopathy. Six patients, previously on enteral nutrition using the nasogastric tube, were successfully switched to oral feeding with help of HFNC. Four patients were directly started on the oral diet with help of HFNC support. HFNC could not support respiration adequately in two of these four patients. The initial trial was successful for one of the patients and HFNC support for oral feeding was used for 3 days, but a progressive increase in ventilatory requirements resulted in failure of HFNC trial subsequent days and the patient was switched to nasogastric feeding. In another patient, the initial trial of HFNC failed due to rapid desaturation within a few minutes of the trial. The eight patients in whom HFNC was used successfully for feeding were switched to HFNC completely and discharged from the hospital after weaning off from oxygen support. The patients who failed the HFNC support for feeding required higher ventilatory requirements and needed endotracheal intubation. Conclusion: Based on our case series, using daily screening trial of oral feeds with HFNC support in selected patients of severe COVID-19 pneumonia on NIV seems thought-provoking and should be explored for its potential in improving patient's nutrition with a positive impact on the outcome.

171. Comparison of Full Outline of Unresponsiveness Score (Four Score) and Glasgow Coma Pupil Score (GCS-P Score) on Admission in Predicting the Outcome in Patients with Traumatic Brain Injury in Intensive Care Unit (Conference Abstract ID: ABS0171)

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Background: Traumatic brain injury (TBI) is a major contributor towards trauma-related mortality and morbidity. Though many scoring models have been proposed to evaluate the level of consciousness, GCS is considered to be the gold standard. GCS-P came into vogue as it incorporates pupillary assessment in GCS to increase predictability. Age and CT findings were then incorporated into GCS-P making GCS-PA CT. The addition of pupil examination and CT findings to GCS increases prognostic accuracy. Hence, we wanted to predict which amongst GCS-P and FOUR score will be a better predictor of the outcome as assessed by the Glasgow outcome scale (GOS). Aims and objectives: To measure the ability of FOUR score and GCS-P score in predicting the outcome of patients with TBI in terms of GOS at the time of discharge or 1 month and 6 months of follow up and to also measure the ability of GCS-PA CT in predicting the outcome of patients with TBI. Materials and methods: It was a prospective observational non-interventional study, carried out in 50 patients over a period of 1 year, who were admitted with TBI and fulfilled our inclusion criteria, in the Intensive Care Unit of Bharati hospital, Pune. The entire data were analysed using SPSS version 22.0, Inc. Chicago for MS windows. Continuous variables are expressed by mean ± SD. Pearson's correlation coefficient was used to correlate coma scales and outcome measures, whereas the predictive value of these scales was established by the ROC curve by calculating the area under the curve (AUC) values by 99% confidence interval. All hypotheses were constructed as two-tailed and p value < 0.01 was considered significant. Results: Out of the 50 patients totally enrolled, the majority of them were below 60 years of age with the mean age being 42.08 years and 37 of them were male. The mean GCS, GCS-P, and FOUR score for all the 50 patients included in the study were 11.84 ± 3.92, 11.62 ± 4.33, and 12.98 ± 4.99, whereas the mean GCS, GCS-P, and FOUR score for the 22 patients with moderate-severe TBI (GCS <13) were 8.05 ± 2.88, 7.55 ± 3.43, and 9.14 ± 4.31. Amongst 50 patients, 14 of them required mechanical ventilation, 10 required surgery, and 5 of them were tracheostomised with a mean duration of hospital stay of 13.07 days amongst the ventilated and 7.27 days amongst the non-ventilated patients. 43 of the total patients had survived at 1 month of discharge, but 1 had died amongst these 43 at 6 months. The AUC for GCS was 0.912, GCS-P = 0.905, FOUR score = 0.937, and for number of CT abnormalities = 0.324. The correlation coefficient of GCS when compared to GCS-P was 0.996 whereas, for GCS compared to FOUR score was 0.959 for all 50 patients. It was similarly correlating strongly when done in a ventilated subgroup. The correlation coefficient for 39 patients who had favourable outcomes (GOS = 4–5) at 1 month of discharge was 0.996 for GCS vs GCS-P and 0.936 for GCS vs FOUR score, whereas, for 42 patients at 6 months it was 0.997 and 0.953. The correlation coefficient for 11 patients who had poor outcomes (GOS = 1–3) at 1 month of discharge was 0.989 for GCS vs GCS-P and 0.930 for GCS vs FOUR score whereas, for 8 patients at 6 months it was 0.986 and 0.944. Conclusion: We conclude that there exists a strong positive linear correlation between GCS, GCS-P, and FOUR score in predicting outcome in TBI patients. This study is being continued and needs to be validated in a larger sample size and in the subset of patients with moderate-severe TBI.

172. Utility of Ultrasound-assessed Diaphragmatic Dysfunction in Estimating Non-invasive Ventilation Failure of Patients with Acute Exacerbation of Chronic Obstructive Pulmonary Disease (Conference Abstract ID: ABS0172)

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Background: Diaphragmatic dysfunction is a major factor in determining the risk of intubation and mortality in patients with chronic obstructive pulmonary disease (COPD). Ultrasound (US) is a simple, non-invasive, and portable imaging modality that can be used to assess diaphragmatic motion. The aim of this study was to evaluate the utility of US-assessed diaphragmatic dysfunction in estimating non-invasive ventilation (NIV) failure of patients with acute exacerbation of COPD.

Methods: This was a prospective observational study conducted in the emergency department of a tertiary care hospital in India. Patients with acute exacerbation of COPD requiring NIV were included in the study. Diaphragmatic motion was assessed using US at the onset of NIV and every 24 hours thereafter. The presence of diaphragmatic dysfunction was defined as a decrease in diaphragmatic excursion of >1 cm or an absence of diaphragmatic movement. The primary outcome was failure of NIV as determined by the need for intubation and mechanical ventilation.

Results: A total of 50 patients were enrolled in the study. Diaphragmatic dysfunction was observed in 25 patients (50%) at the onset of NIV. The median duration of NIV was 72 hours (IQR: 48-120 hours). The need for intubation and mechanical ventilation was observed in 10 patients (20%) at the end of the study period. The sensitivity and specificity of US-assessed diaphragmatic dysfunction in predicting NIV failure was 80% and 85%, respectively. The positive and negative predictive values were 60% and 90%, respectively.

Conclusion: US-assessed diaphragmatic dysfunction can be used as a simple and non-invasive method to estimate NIV failure in patients with acute exacerbation of COPD. Further studies with larger sample sizes are needed to validate these findings.
Controlled mode at a FiO2 of 80% of ventilated with the driving washout method. The patient was ventilated with a pressure-functional residual capacity (FRC) was measured using the nitrogen Carescape R860 GE ventilator. As per protocol, the transpulmonary of ventilation (TV), and changes in end-expiratory lung volume/residual lung volume was due to the recruitment of previously non-ventilated lung areas positioning. To demonstrate that the improvement of oxygenation was a case report of a morbidly obese individual managed with lateral positioning as a salvage for deteriorating PaO2/FiO2 ratio through.

**Aim and objective:**

To demonstrate the effectiveness of lateral positioning on oxygen levels in an obese critically hypoxic COVID-19 patient: A case report (Conference Abstract ID: ABS0174)

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**DOI:** 10.5005/jp-journals-10071-23712A.174

**176. Single, High Dose Vitamin D Supplementation in Vitamin D Deficient Severe COVID-19: Randomized, Double-Blind, Placebo-control Study (Shade-S) (Conference Abstract ID: ABS0176)**


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**DOI:** 10.5005/jp-journals-10071-23712A.176

**Aim and background:**

Efficacy of therapeutic vitamin D3 supplementation for ICU outcomes in severe COVID-19 is sparingly studied. **Objective:** Effect of single high-dose vitamin D3 supplementation on sequential organ function assessment (SOFA) score in patients with moderate to severe COVID-19 disease.

**Materials and methods:** A single centre, randomized, double-blind, placebo-controlled study was carried out among 90 patients with moderate to severe COVID-19 ARDS defined by PaO2/FIO2 <200. Participants received 0.6 million IU vitamin D3 (oral nano formulation) (intervention) or placebo (equal volume, oral). SOFA score on day-3,-7,-10, and -14 was measured. The primary outcome was a change in day-7 SOFA score from admission. Pre-specified secondary outcomes were day 10 and day-14 SOFA score, change in PaO2/FIO2 ratio, in-hospital all-cause mortality, and inflammatory cytokine levels. **Results:** A total of 358 patients were screened and 90 patients (45 in each group) were included. 25 (OHD3 levels were 12.0 (10.0–16.0) and 12.7 (12–18) ng/mL (p = 0.059) at study entry; 60 (54.40 to 65.59) ng/mL and 3.8 [1.05 to 6.55] at day-3 in the intervention and placebo group, respectively. The SOFA score on day-7 was better in the treatment group (intergroup difference was −2 (95% CI, −3.99 to −0.01), p = 0.009) with effect-size of r = 0.35 (95% CI, 0.09–0.55). The all-cause mortality with intervention was 24.4% compared to 44.4% (p = 0.046) in the control group. A significant improvement in the day-7 PaO2/FIO2 ratio [200.50 (101.01–291.30) and 110.70 (66.20–166.50), p = 0.003; intergroup difference -98.6 (40.70 to 156.49)], a decrease in CRP (−48.63 (−80.78 to −16.48).
and 5.4 (−17.62 to 28.42), \( p = 0.042 \)], ferritin [−412.3 (−736.29 to −88.31) and 41.5 (−293.68 to 376.68), \( p = 0.018 \)] was observed in the intervention and placebo groups, respectively. **Conclusion:** Single high-dose oral cholecalciferol supplementation to increase vitamin D3 >50 ng/mL improves the SOFA score and reduces in-hospital mortality in vitamin-D deficient patients with severe COVID-19. **Clinical Trials.gov No.** (NCT: 04952857)

177. **Pattern of Gram-negative Bacilli, Epidemiology, Resistant Pattern and Patient Outcome on Adult Sepsis Patients in ICU At Ruby Hall Clinic (Conference Abstract ID: ABS0177)**

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**Aim and background:** Sepsis is a common diagnosis, both primary and secondary in critically ill patients, which is treatable, yet at times becomes challenging to choose appropriate antibiotic therapy. ICU patients have multiple comorbidities, having a prolonged stay in the hospital, and hence getting exposed and colonized by gram-negative bacteria. There is no gold standard method to diagnose sepsis in these patients and hence no standardized protocol to treat it. Therapy varies with each individual case depending upon clinical, radiological, microbiological data. This study aims to study patient profile and their clinical recovery from sepsis (defined as per the new Sepsis 3 guidelines from SSC 2021) with emphasis on the usage of the certain newer group of antibiotics and their optimal usage. **Objectives:** 1. To study the patient profile and epidemiology of infections caused by carbapenem-resistant gram-negative bacilli in ICU at Ruby Hall Clinic. 2. To study the impact of antibiotics including BL/BLI for treatment of such strains and its optimum utilization. 3. How it can be improved and used in optimum utilization of currently used antibiotics? **Materials and methods:** **Study site:** Ruby Hall Clinic, Pune, Maharashtra. **Study population:** Admitted patients under Dept CCM at Ruby Hall. **Study duration:** A year and half (July 2020 to December 2021). **Study design:** Hospital-Based Single centre Prospective Observational Study. **Sample size calculation:** The sample size was determined by using the effect size from the previously published study (Mahendra AD et al., Arch Clin Microbiol. 2016). The minimum sample size required according to this formula is 48.56 OR 49. **Sampling technique:** Convenience Sampling Method. **Statistical methods for data analysis:** Chi-square test or Fisher’s exact probability test for 2 × 2 contingency table if >20% cells have expected frequency <5. \( p \) values <0.05 will be considered to be statistically significant. **Results and conclusion:** Results awaited but expected to be ready well before the conference.

178. **Incidence and Outcomes of Clinically Significant Bleeding Events in Critically Ill Covid-19 Patients Receiving Therapeutic Dose Anticoagulants: A Retrospective Cohort Study (Interact Study)** (Conference Abstract ID: ABS0178)

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**Aim and background:** The high mortality associated with the thrombotic events in hospitalised COVID-19 patients resulted in the usage of anticoagulants in varying doses. Whether the high-dose anticoagulants have led to better outcomes or higher incidence of clinically significant bleeding events is still debatable. **Objectives:** To find the incidence of clinically significant bleeding events in moderate to severe COVID-19 patients on therapeutic anticoagulation and the factors influencing these events. **Materials and methods:** In our retrospective, single-centre, cohort study of 155 critically ill COVID-19 patients we observed the incidence of clinically significant bleeding. Multivariate regression models were used to evaluate the association between anticoagulant regimen, coagulation, and inflammatory markers with the incidence of bleeding and thrombotic events. **Results:** The incidence of Clinically Relevant Non-Major Bleeding (CRNMB) was 33.5% (26.17–41.46%), and major bleeding was 9.03% (5.02–14.69%). The anticoagulation intensity at baseline had a very high odds of major bleeding when Enoxaparin and dual antiplatelet therapy were used together (adjusted OR of 434.09 [3.81–4950.95], \( p < 0.05 \)). At admission, bleeders had a poorer P/F ratio with more patients on invasive ventilation. At the time of bleeding, the bleeders had a higher d-dimer, ferritin, CRP, and procalcitonin. The subhazard ratio (SHR) for death in bleeders was 3.35 (95% CI, 1.97–5.65; \( p < 0.001 \)). **Conclusion:** The incidence of bleeding in critically ill COVID-19 patients on therapeutic anticoagulation increases with the severity of the disease as well as with concurrent use of dual antiplatelets. Major bleeding may also contribute to higher mortality.


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**Aim and objective:** To present a rare case of abdominal wall fungal coinfection with Mucormycosis in a patient of COVID-19. **Materials and methods:** A 33-year-old female operated case of laparoscopic ectopic pregnancy removal with salpingectomy and tubectomy, at postoperative day 5 had redness and pus discharge from the operative site and was diagnosed with abdominal wall cellulitis. She underwent local exploration and wound wash. On postoperative day 21, the patient came to the emergency room with cellulitis, and pain at the port insertion site. On examination, we highlight BP 90/50 mm Hg and blood test analysis with HB-8.3, leucocyte count 29.91 × 109/L, CRP 333 mg/L. **Results:** CT scan revealed necrotizing fasciitis. She underwent wide local excision and debridement. Post debridement the next day during dressing, the wound showed a cotton fluffy appearance at the edges and part of the base with black necrotic areas. A wound swab was sent for fungal culture, KOH mount, pus culture, and tissue for histopathology. In the meantime, she was started on empirical antifungal amphotericin B, meropenem, and minocycline antibiotics. On history, the patient remarked that she did have fever, sore throat, and cough for 5 days, 4 weeks before laparoscopic ectopic pregnancy removal. Also one of her family members had tested positive for COVID-19. COVID antibodies test was done which were reactive: 1.96. Tissue histopathology revealed mucormycosis.
MRI abdomen findings showed a 15 cm large defect involving the entire thickness of subcutaneous fat. A high degree of suspicion and promptness in starting antifungal treatment prevented the fatal outcome. **Conclusion:** COVID-19 is associated with immune dysregulation and consequently life-threatening infections. The prolonged and indiscriminate use of steroids for the treatment of COVID-19 could contribute to this problem of fungal superinfection of mucormycosis. It seems prudent to have a very high suspicion supplemented with thorough clinical examination and low threshold for imaging in order to diagnose secondary fungal infections, such as mucormycosis. Early so that the treatment can be instituted as soon as possible.


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Cytomegalovirus infection is a common occurrence in the immunocompromised host and can affect any organ of the human body. Clinical presentation is extremely variable and nonspecific, which makes diagnosis difficult. Post COVID patients are immunocompromised due to viral infection, uncontrolled diabetes, poor nutrition, hyper-catabolic state, and use of immunosuppressive drugs like steroids and tocilizumab. We are presenting a clinical spectrum of seven post COVID patients who were readmitted to the hospital with variable clinical spectrums. Early suspicion and appropriate pharmacological interventions were necessary to make the right diagnosis and achieve a positive outcome. **Materials and methods:** This is a retrospective analysis of seven post COVID patients admitted in our hospital since 15th January to 1 August 2021. All post COVID patients were investigated and only those were positive by PCR and serology for CMV was analyzed. **Results:** All seven patients were previously treated in hospital for severe COVID associated pneumonia and readmitted with various CMV related complications. Three out of seven patients died and four survived. All patients were having multisystem involvement with predominately affected respiratory system in the form of pneumonia and reappearance of ground glass lesions in HRCT and increased demand of oxygen. **Conclusion:** CMV-associated complications are underdiagnosed in post COVID patients and this is one of the etiologies of re-hospitalization of such patients. Clinical spectrum is wide and nonspecific therefore strong clinical suspicion and early investigation can provide an opportunity for optimal therapeutic intervention for the suffering patient.

181. Correlation of COVID-19 Biomarkers with Disease Severity: A Retrospective Study (Conference Abstract ID: ABS0181)

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**Introduction:** Many viruses through aerosols, droplets, and droplet nuclei utilize the respiratory passages to establish not only localized respiratory tract infections but also systemic disease. The coronaviruses (CoV) are no exception. The two most common illnesses that occurred in the recent past were severe acute respiratory syndrome (SARS, 2003) and the Middle East respiratory syndrome (MERS, 2012). The current pandemic, which broke out in late December 2019, has been a major threat to global public health due to significant morbidity and mortality, akin to snapping of Thanos’ fingers. The novel coronavirus was initially named the 2019-novel CoV (2019-nCoV), but because of nearly 80% genetic homology to SARS-CoV, the Coronavirus Study Group of International Committee rechristened this virus as SARS-CoV-2. The disease was named coronavirus disease 2019 (COVID-19) on January 12, 2020, by the World Health Organization (WHO). According to the Advisory Committee on dangerous pathogens UK, COVID-19 is assigned as a hazardous group-3 organism, meaning that it can cause severe human disease. The novel coronavirus was named the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2, 2019-nCoV) due to its high homology (~80%) to SARS-CoV, which caused acute respiratory distress syndrome (ARDS) and high mortality during 2002–2003. The outbreak of SARS-CoV-2 was considered to have originally started via a zoontic transmission associated with the seafood market in Wuhan, China. Later it was recognized that human-to-human transmission played a major role in the subsequent outbreak. The most common clinical manifestations of COVID-19 include fever, cough, dyspnea, fatigue, and myalgia. A few patients have developed severe pneumonia and they may present with acute respiratory distress syndrome (ARDS), extrapulmonary organ dysfunction, or even death. SARS-CoV-2 virus primarily affects the respiratory system, although other organ systems are also involved. Lower respiratory tract infection-related symptoms including fever, dry cough, and dyspnea were reported in the initial case series. In addition, headache, dizziness, generalized weakness, vomiting, and diarrhea were observed. It is now widely recognized that respiratory symptoms of COVID-19 are extremely heterogeneous, ranging from minimal symptoms to significant hypoxia with ARDS. The heterogeneous disease course of COVID-19 is unpredictable with most patients experiencing mild self-limiting symptoms. However, up to 30% require hospitalisation, and up to 17% of these require intensive care support for acute respiratory distress syndrome (ARDS), hyperinflammation, and multiorgan failure. A cytokine storm in patients with severe disease was identified in the early reports of Wuhan patients and is intrinsic to disease pathology. In this cohort, elevated plasma interleukin (IL)-2, IL-7, IL-10, granulocyte colony-stimulating factor (GCSF), interferon-γ-induced protein 10 (IP10), monocyte chemoattractant protein-1 (MCP1), macrophage inflammatory protein 1-alpha (MIP1A), and tumor necrosis factor-α (TNF-α) levels in ICU patients were identified. Studies have shown that severe or fatal cases of COVID-19 disease are associated with an elevated white cell count, blood urea nitrogen, creatinine, markers of liver and kidney function, C-reactive protein (CRP), interleukin-6 (IL-6), lower lymphocyte (<1000/µL) and platelet counts (<100 x 10⁹/L) as well as albumin levels compared with milder cases in which survival is the outcome. Subsequent studies have implicated IL-6 as a valuable predictor of adverse clinical outcome and a potential therapeutic target. One or more clinical and wet biomarkers may enable early identification of high-risk cases, assisting disease stratification and effective use of limited specialist resources. Age is a strong risk factor for severe illness, complications, and death. Patients
with no underlying medical comorbid conditions have an overall case fatality rate of <1%. Case fatality is higher for patients with comorbidities. The severe cases are associated with elevated levels of inflammatory biomarkers such as serum lactate dehydrogenase, creatine kinase, C-reactive protein (CRP), d-dimer, procalcitonin, and ferritin. Since laboratory medicine has always supported clinical decision-making in various infectious diseases, it is important to assess the ability of laboratory-derived biomarkers to facilitate risk stratification of COVID-19 disease. This study will comprehensively explore clinical disease features and routine laboratory tests associated with COVID-19 disease and its complications, to address their association with disease severity and outcome. Hence, the present retrospective study will be done at our tertiary care centre to assess the association between different laboratory biomarkers and disease severity and outcomes in COVID-19 patients. Aims and objectives: Clinical correlation of biomarkers and disease severity in COVID-19 patients – a retrospective study.

Review of Literature:
Xia et al.16 in 2020 defined disease stages and identified stages’ determining factors are instructive for the definition of standards for home quarantine. The authors demonstrated pulmonary involvement on a chest CT scan in 97.9% of cases. It took 16.81 ± 8.54 (3–49) days from the appearance of the first symptom until 274 patients tested virus-negative in naso- and oropharyngeal (NP) swabs, blood, urine, and stool, and 234 (83%) patients were asymptomatic for 9.09 ± 7.82 (1–44) days. Subsequently, 131 patients were discharged. One hundred and sixty-nine remained in the hospital; these patients tested virus-free and were clinically asymptomatic because of widespread persisting or increasing pulmonary infiltrates. Hospitalization took 16.24 ± 7.57 (2–47) days; the time interval from the first symptom to discharge was 21.37 ± 7.85 (3–52) days. The authors concluded that with an asymptomatic phase, disease courses are unexpectedly long until the stage of virus negativity. NP swabs are not reliable in the later stages of COVID-19. Pneumonia outlasts virus-positive tests if sputum is not acquired. Imminent pulmonary fibrosis in high-risk groups demands follow-up examinations. Investigation of promising antiviral agents should heed the specific needs of mild and moderate COVID-19 patients.

Keddie et al.17 in 2020 investigated the routine laboratory tests and cytokines implicated in COVID-19 for their potential application as biomarkers of disease severity, respiratory failure, and need for higher-level care. The authors found CRP, IL-6, IL-10, and LDH were most strongly correlated with the WHO ordinal scale of illness severity, the fraction of inspired oxygen delivery, radiological evidence of ARDS, and level of respiratory support. IL-6 levels of ≥3.27 pg/mL provide a sensitivity of 0.87 and specificity of 0.64 for a requirement of ventilation, and a CRP of ≥37 mg/L of 0.91 and 0.66. The authors concluded that reliable stratification of high-risk cases has significant implications on patient triage, resource management, and potentially the initiation of novel therapies in severe patients.

Malik et al.18 in 2020 in a systematic review and meta-analysis assessed the role of biomarkers in evaluating the severity of disease and appropriate allocation of resources. Studies having biomarkers, including lymphocyte, platelets, d-dimer, lactate dehydrogenase (LDH), C-reactive protein (CRP), aspartate aminotransferase (AST), alanine aminotransferase (ALT), creatinine, procalcitonin (PCT), and creatine kinase (CK), and describing outcomes were selected with the consensus of three independent reviewers. The authors found lymphopenia, thrombocytopenia, elevated d-dimer, elevated CRP, elevated PCT, elevated CK, elevated AST, elevated ALT, elevated creatinine, and LDH were independently associated with a higher risk of poor outcomes. The authors concluded a significant association between lymphopenia, thrombocytopenia, and elevated levels of CRP, PCT, LDH, d-dimer, and COVID-19 severity. The results have the potential to be used as an early biomarker to improve the management of COVID-19 patients, by identification of high-risk patients and appropriate allocation of healthcare resources in the pandemic.

Tjendra et al.19 in 2020 assessed specific laboratory parameters and summarized the currently available literature on the predictive role of various biomarkers in COVID-19 patients. The authors summarised that although the markers are considered non-specific, acute-phase reactants, including C-reactive protein (CRP), ferritin, serum amyloid A (SAA), and procalcitonin, were reported as sensitive markers of acute COVID-19 disease. Significantly elevated white blood cell count; marked lymphopenia; decreased CD3, CD4, or CD8 T-lymphocyte counts; high neutrophil count; thrombocytopenia; and markedly elevated inflammatory biomarkers were associated with severe disease and the risk of developing sepsis with rapid progression. Trends observed by serial laboratory measurements during hospitalization, including a progressive decrease of lymphocyte count, thrombocytopenia, elevated CRP, procalcitonin, increased liver enzymes, decreased renal function, and coagulation derangements, were more common in critically ill patient groups and associated with a high incidence of clinical complications. Elevated interleukin 6 level and markedly increased SAA were most often reported in severely and critically ill patients. Indicators of systemic inflammation, such as neutrophil to lymphocyte ratio, systemic immune-inflammation index, or COVID-19 Severity Score, may be used to predict disease severity, outcome, and mortality.

Xue et al.20 in 2020 in a retrospective study identified early diagnostic and prognostic biomarkers to determine the risk of developing a serious illness. The authors found patients with severe disease had reduced neutrophils and lymphocytes; severe coagulation dysfunction; altered content of biochemical factors (such as urea, lactate dehydrogenase); elevated high sensitivity C-reactive protein levels, neutrophil–lymphocyte, platelet–lymphocyte, and derived neutrophil–lymphocyte ratios, high sensitivity C-reactive protein–prealbumin ratio (HsCPAR), systemic immune-inflammation index, and high sensitivity C-reactive protein–albumin ratio (HsCAR); and low lymphocyte–monocyte ratio, prognostic nutritional index (PNI), and albumin-to-fibrinogen ratio. PNI, HsCAR, and HsCPAR correlated with the risk of severe disease. The nomogram combining the three parameters showed good discrimination with a C-index of 0.873 and reliable calibration. Moreover, HsCAR and HsCPAR correlated with the duration of hospital stay. The authors concluded that taken together, PNI, HsCAR, and HsCPAR may serve as accurate biomarkers for the prediction of disease severity in patients with COVID-19 upon admission/hospitalization.

Khan et al.21 in 2021 in a single-center, observational study evaluated the significance of inflammatory markers in different categories of COVID-19 in admitted patients. Infection biomarkers, including hs-CRP, serum ferritin, serum creatinine, ALT, ALP, cardiac troponin-I, and IL-6 were analyzed. The authors found median age was 61.3 years. 70% (35) were males while 30% (15) were females.
We noted significantly increased hs-CRP (9.32 mg/dL ± 10.03) and ferritin levels (982.3 ng/mL ± 601.9). A noteworthy increase was observed in neutrophil count (11.05 × 10^9/L) and a decrease was observed in lymphocyte count (0.27 × 10^9/L), and the platelet count was borderline decreased (244.1 × 10^9/L). IL-6 levels were markedly increased in all admitted patients (100.2 ± 122.2 pg/mL). The authors concluded that serum levels of CRP, troponin-I, ALP, ALT, serum creatinine, and ferritin are markedly increased in COVID-19 patients. Increased CRP and ferritin levels were also associated with secondary bacterial infection and poor clinical outcomes.

Magdy et al.22 in 2021 in a retrospective study evaluated the role of semi-quantitative CT severity scoring versus LDH as prognostic biomarkers for COVID-19 disease severity and short-term clinical outcome. The authors found CT severity score and LDH were significantly higher in severe and critical cases compared to mild cases (p value < 0.001). High predictive significance of CT severity score for COVID-19 disease course noted, with cut-off value ≥13 highly predictive of severe disease (96.96% accuracy); cut-off value ≥16 highly predictive of critical disease (94.21% accuracy); and cut-off value ≥19 highly predictive of short-term mortality (92.56% accuracy). CT severity score has higher sensitivity, specificity, positive, and negative predictive values as well as overall accuracy compared to LDH level in predicting severe, critical cases, and short-term mortality. The authors concluded that Semi-quantitative CT severity scoring has high predictive significance for COVID-19 disease severity and short-term mortality with higher sensitivity, specificity, and overall accuracy compared to LDH. Our study strongly supports the use of CT severity scoring as a powerful prognostic biomarker for COVID-19 disease severity and short-term clinical outcome to allow triage of need for hospital admission, earlier medical interference, and to effectively prioritize medical resources for cases with high mortality risk for better decision making and clinical outcome.

Materials and Methods:
A hospital-based retrospective observational study will be done at our tertiary care centre on 200 patients to assess the association between different laboratory biomarkers and disease severity and outcomes in COVID-19 patients.

Study design: A hospital-based retrospective observational study.
Study duration: The study will be conducted from August 2020 onwards.
Study area: The study will be done at our tertiary care centre in the department of Pulmonology, Fortis Hospital, Vasant Kunj, New Delhi, a tertiary health care centre with all the required diagnostic modalities including research facility.
Study population: All COVID-19 patients admitted in COVID ICU from the month of August 2020 onwards at Fortis Hospital, Vasant Kunj, New Delhi who fulfilled the inclusion criteria.
Sample size: 200 patients

Formulation for sample size calculation was:

\[ N = \left( \frac{Z^2 \times P \times (1 - P)}{d^2} \right) \]

\[ Z^2 = \text{table value of alpha error from standard normal distribution} \]

\[ Z^2 = 1.96 \times 1.96 = 3.84 \]

\[ \text{Power (P)} = 0.05 \]

\[ 1 - P = 0.95 \]

\[ \text{Precision error of estimation (d)} = 3\% \]

\[ d^2 = 0.0009 \]

\[ N = (3.84 \times 0.05 \times 0.95)/0.0009 = 198.67 \]

A similar study done by Keddie et al.17 investigated the routine laboratory tests and cytokines implicated in COVID-19 for their potential application as biomarkers of disease severity, respiratory failure the sample size was 203.

Hence, sample size of 200 patients was selected for the study of which 110 patients were mild/moderate cases and 90 patients were severe/critical cases.

Inclusion Criteria: All the patients of COVID-19 admitted in COVID ICU from August 2020 onwards.
Exclusion Criteria: None

Methodology: The study will be done at our tertiary care centre in the department of Pulmonology, Fortis Hospital, Vasant Kunj, New Delhi, on attending OPD/IPD after due permission from the Institutional Ethics Committee and Review Board and after taking Written Informed Consent from the patients.

After approval from the Institutional Ethics Committee, a valid informed consent will be taken. Once the patients will be enrolled for the study, a thorough history and physical examination will be done as per proforma. Informed consent will be taken in written form patients or patient’s attendants.

A total of 200 consecutive patients presenting with COVID-19 at our tertiary care centre in the department of Pulmonology, Fortis Hospital, Vasant Kunj, New Delhi irrespective of gender, race, religion, and socio-economic background will be enrolled in the study.

Detailed history, general physical examination, systemic examination, laboratory parameters, radiological findings will be incorporated as per proforma.

Demographic and epidemiological statistics, such as age, sex, and disease history, will be gathered upon admittance. For laboratory confirmation, real-time reverse transcriptase-polymerase chain reaction (RT-PCR) will be used as gold standard, according to the recommended protocol of the hospital. All baseline serum samples will be collected immediately after admission for total blood count, ALT, ALP, CRP, aPTT, IL-6, and ferritin.

The severity of COVID-19 was assessed as per the Ministry of Health and Family Welfare (MOHFW) guidelines, Government of India.23

Mild cases were those COVID-19 patients who had uncomplicated upper respiratory tract infections with no evidence of hypoxia and breathlessness.

Moderate cases were those with radiological and clinical features of pneumonia with SpO2 in the range of 90–94%, with a respiratory rate of more or equal to 24 breaths per minute.

Severe cases were those who were meeting any of the following criteria: respiratory distress with respiratory rate ≥30/minute and oxygen saturation ≤90% at rest or respiratory rate ≥24 breaths per minute along with features of sepsis and septic shock.

The clinical classifications are as follows: (1) mild, minor symptoms and imaging shows no pneumonia. (2) moderate, with fever, respiratory tract symptoms, and imaging shows pneumonia. (3) Severe, meet any of the following: a) respiratory distress, respiratory rate ≥ 30 beats/minute; b) in the resting state, means oxygen saturation ≤ 93%; c) arterial blood oxygen partial pressure/oxygen concentration ≤300 mm Hg (1 mm Hg = 0.133 kPa); d) pulmonary imaging showed that the lesion progressed more than 50% within 24–48 h. (4) Critical, one of the following conditions: a) respiratory failure occurs and requires mechanical ventilation; b) shock occurs; c) ICU admission is required for combined organ failure.
**Laboratory Investigation:** Roughly 2–4mL of peripheral blood will be collected from subjects of the categorized groups, and serum will be separated by 2000 rpm/20 minutes centrifugation. Serum cytokines will be analyzed using the Elecsys IL-6 immunoassay and electrochemiluminescence immunoassay (ECLIA) performed on a COBAS e411 analyzer (Roche Ltd.). It is an *in vitro* diagnostic test for the quantitative determination of IL-6 in human blood. 25 μL of serum is incubated with biotinylated monoclonal IL-6 antibody, labeled with a ruthenium complex and streptavidin-coated microparticles, forming a sandwich complex with the antigens present in the sample, and the resulting chemiluminescence is then measured by using a photomultiplier.

**Data collection:** All suspected infection patients will be taken upper respiratory throat swab samples at admission and then to designated authoritative laboratories to detect the SARS-CoV-2. Bacterial and fungal detections of sputum or respiratory secretions and other laboratory tests will be completed in the clinical laboratory at the Department of Pulmonology. C-reactive protein (CRP) will be detected by the immunoturbidimetry method. Procalcitonin (PCT) was detected by the Roche electrochemiluminescence method. Erythrocyte sedimentation rate (ESR) was measured by Westergren's international standard method.

**Possible Risks Involved:** Since the study is a retrospective study there will be no extra risk/complications.

**Possible Benefits:** Since laboratory medicine has always supported clinical decision-making in various infectious diseases, it is important to assess the ability of laboratory-derived biomarkers to facilitate risk stratification of COVID-19 disease. Therefore, in the present systematic review and meta-analysis, we assessed the association between different laboratory biomarkers and outcomes in COVID-19 hospitalised patients.

**References**


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**Aim and background:** Ceftaroline, the active metabolite of ceftaroline fosamil, is a cephalosporin approved for treating complicated skin and soft tissue infections (cSSTI) caused by *Staphylococcus aureus*, including meticillin-resistant *S. aureus*
(MRSA). **Objective:** This report from ATLAS (Antimicrobial Testing Leadership and Surveillance) analyses the current activity of ceftaroline and its comparators against *Staphylococcus aureus* associated with cSSTI from 2019. **Materials and methods:** Non-duplicate gram-positive clinical isolates *(n = 616)* were collected in 2019 from 8 Indian tertiary care centers. Susceptibility was confirmed at an IHMA (International Health Management Associates) laboratory using supplied broth microdilution panels (Microscan), according to the Clinical and Laboratory Standards Institute (CLSI) guidelines for all antibiotics except Tigecycline (FDA defined MIC breakpoints). *In vitro* activity of ceftaroline and its comparator agents was assessed for *Staphylococcus aureus* isolates from cSSTI samples. **Results:** *Staphylococcus aureus* was identified in 55.2% *(N = 340)* of all the Gram-positive clinical isolates. Of these 157 (46.2%) belonged to cSSTI. MRSA was identified in 39% *(n = 61)* of the cSSTI samples while MSSA accounted for 61% *(n = 96).* For MRSA pathogens, ceftaroline showed a good susceptibility rate, i.e., 98.4% *(n = 60).* Among the comparators 100% *(n = 61)* susceptibility was seen for vancomycin, teicoplanin, linezolid, daptomycin, tigecycline, and clindamycin followed by gentamicin, i.e., 46% *(n = 28).* The least susceptibility was seen for levofloxacin, i.e., 3.3% *(n = 58).* For MSSA pathogens, ceftaroline, vancomycin, teicoplanin, linezolid, daptomycin, and tigecycline, clindamycin showed 100% *(n = 96)* susceptibility. Gentamicin showed a susceptibility of 91% *(n = 8)* and the least susceptibility was seen for levofloxacin 19% *(n = 71).* **Conclusion:** Ceftaroline showed an overall good susceptibility against *Staphylococcus aureus* isolates, including MRSA, from cSSTI infection. This study shows that ceftaroline remains an active agent *in vitro* against MRSA associated with cSSTIs. Based on its *in vitro* activity and good tolerability, ceftaroline can be considered as a potential first-line therapy for complicated skin and soft tissue infections caused by MRSA.

183. Early versus Late Awake Prone positioning in COVID-19 Patients (Conference Abstract ID: ABS0183)

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**Background:** Awake prone positioning (APP) under CARP protocol is widely used in the management of patients with coronavirus disease (COVID-19) in recent years. The primary objective of this study was to compare the outcome. **Aim:** Compare the outcome of COVID-19 patients who received early versus late awake prone position in terms of oxygenation, patient comfort, increased non-ventilatory days, and final outcome. **Settings and design:** Single centre, retrospective and observational study. **Materials and methods:** Analysis of data collected for a randomized controlled trial in adult patients with acute hypoxemic respiratory failure secondary to COVID-19, who received awake prone positioning under CAPR protocol for minimal one hour were included. Early prone positioning was defined as APP initiated within 24 h of high-flow nasal cannula (HFNC) start. 50 patients were included in the study. Primary outcomes were patient comfort, hospital stay, complications during ICU stay, 28-day mortality, and intubation rate. **Statistical analysis:** Data analysis was done using SPSS software. *P* value < 0.05 was considered statistically significant. **Results:** We included 50 patients between the ages of 18 and 60 years. The early APP group had lower mortality compared to the late APP group but no difference was found in intubation rate. Advanced age, intubation, longer time to initiate APP were associated with increased mortality. **Conclusion:** Early initiation (< 24 h of HFNC use) of APP in acute hypoxemic respiratory failure secondary to COVID-19 improves 28-day survival.

184. Are We Feeding Our Critically Ill Covid Patients, Right? (Conference Abstract ID: ABS0184)

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**Objective:** Primary objective: To study the energy expenditure in a significant number of mechanically ventilated COVID-19 patients in ARDS. Secondary objective: 1. To compare the deviations seen with predictive equations based on actual and ideal body weight. 2. To compare the EE derived versus the VCO2 based estimation. **Materials and methods:** The Resting Energy expenditure (REE) of 60 patients was measured with the help of the ESCO/VYX-module for indirect calorimetry using the GE CARESCAPE R860 ventilator. The steady-state was validated by ensuring a respiratory quotient of 0.7–0.8 and variation of 5% for VCO2 and VO2 for at least 30 minutes. It was ensured that for 60 minutes the patient was not disturbed by endotracheal tube suction, no ventilatory changes were performed, and no vasopressors alteration was done. The absence of a leak was ascertained on the ventilator. The calculation was done from day 2 onwards after mechanical ventilation and subsequently every 2nd day till the patient was on ventilator. The resting energy expenditure was also calculated by the simple predictive equations as per ESPEN COVID-19 guidelines, i.e., 25–30 kcal/kg of which the mean of 27 kcal/kg was chosen. Bodyweight was estimated by height equation 50 kg for 5 ft plus 2.3 kg for each inch >5 feet. The quantitative measures were studied by Bland and Altman plot to describe an agreement between the two by constructing a line of agreement. The limits were calculated by using the mean and standard deviation of the difference between the two measurements. **Statistics:** The EE derived from the two methods is compared by Bland and Altman plots. Reliability and adequacy between the methods are tested using ROC curves with kappa coefficient (reliability coefficient). For the coefficient of variation, ANOVA is used when applicable. IBM SPSS Statistics for Windows, version 24.0 (IBM Corporation, Chicago, USA) was used to perform analyses. MedCalc version 19 (MedCalc bv, Ostend, Belgium) was used to create Bland-Altman plots. **Results:** No 1: The estimated mean energy expenditure derived from weight-based calculations was 2576 ± 469 kcal/24 hours, which was significantly higher when compared with an estimation of EE from indirect calorimetry of 1507 ± 499 kcal/24 hours (15–20 kcal/kg/day). This correlation is significant but not useful for prediction (*R* = 0.345). No 2: The estimated mean EEVCO2 was 1388 ± 467 kcal/24 hours compared with an estimation of EE from indirect calorimetry of 1507 ± 499 kcal/24 hours. The Bias and precision, as visualized by the limits of agreement, are shown in the Bland-Altman plot where there was a significant bias of only 118 kcal/day (95% CI (~187 to 422 kcal); *p* < 0.001. The regression analysis reveals that for every one unit change in EEVCO2 value, there is one unit change in EE by IC. This
correlation is significant ($R = 0.951$). Similarly, the Bland-Altman plot was tested between the estimated mean EEVCO2 and EE derived from weight-based calculations. The difference was wide with significant bias of 1187 kcal/day (95% CI (−2256 to (−118) kcal); $p < 0.001$). **Conclusion:** The ESPEN guidelines (30 kcal/kg through the disease state) for energy estimation may not be right in COVID-19 patients and the study calls for more personalisation of energy estimation by the correct use of indirect calorimetry.

### 185. A Prospective Observational Study of Clinical Profile and Outcome in Cases with Tuberculous Meningitis At a Tertiary Care Centre in Western Maharashtra (Conference Abstract ID: ABS0185)

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**Aim and background:** Tuberculous meningitis is one of the most fatal forms of tuberculosis, early diagnosis and treatment of which can reduce morbidity and mortality. We sought to study the clinical profile and outcome of adult patients with tuberculous meningitis. **Objectives:** The primary objective was to study frequencies of symptoms and diagnostic findings at presentation in cases of tuberculous meningitis. Additionally, we studied outcomes in cases at the end of treatment. **Materials and methods:** This prospective observational study was conducted on 136 consecutive diagnosed cases of tuberculous meningitis admitted in the medical ward and intensive care unit of a tertiary care hospital in Maharashtra over 18 months from January 2018 to July 2019. IEC clearance was taken from the institutional ethics committee at JJ Hospital. Clinical, biochemical, microbiological, and radiological evaluation was done. Data were analyzed using SPSS 22 version software and $p$ value of <0.05 was considered significant. **Results:** The mean age of cases was 35.2 ± 14.69 years, the majority from the age group of 18 to 40 years. Out of 136 cases, 62 (45.6%) were males and 74 (54.4%) females. The commonest clinical features were fever (73.52%) and headache (63.31%), followed by altered sensorium (30.14%) and seizure (17.56%). Acute onset presentation was seen in 54 cases (39.70%). 42 cases (30.9%) were associated with present or past pulmonary tuberculosis and 34 cases (25%) with the retroviral disease. Majority of the cases (55.58%) presented as stage II disease. 7 cases (5.2%) had hemiparesis and 3 (2.2%) had ophthalmoplegia. Mean ESR was 56.59 ± 22.87. CSF showed lymphocytosis (mean 88.4 ± 18.09%), low glucose percentage (mean 39.57 ± 0.2%), and high protein (mean 146.02 ± 106.62 mg/dL). CSF gene expert was negative in the majority of the cases (86.02%). The mean ADA level was 8.40 ± 7.74 IU/L. 117 cases (86%) showed positive neuroimaging, important findings being tuberculomas, hydrocephalus, and gyral enhancement. 98 cases (72.06%) were asymptomatic at the end of 6 months of therapy. Mortality was 11.76% and high CSF leucocyte count, stage III disease at presentation were significantly associated with mortality. **Conclusion:** Tuberculous meningitis usually presents as an acute onset illness with fever, headache, or altered sensorium. CSF Gene Xpert has low sensitivity as compared to neuroimaging. Advanced disease was associated with poor outcomes. **Keywords:** CSF Gene Xpert, Tuberculous meningitis.

### 186. Success of NIV Use in Hypoxic Respiratory Failure in COVID Patients: How Different and Similar Was it To H1N1 Pneumonia?—A Retrospective Study (Conference Abstract ID: ABS0186)

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**Introduction:** Although NIV is a common mode of respiratory support in hypoxic respiratory failure, its use is not adequately supported by literature and guidelines. But in recent times NIV is used extensively in COVID pneumonia patients. Earlier, H1N1 pneumonia group of patients were identified to benefit from use of NIV. But their success in preventing intubation or reducing mortality were not validated by studies. **Objective:** Our aim was to retrospectively look into the COVID patients admitted to our ICU, observe the outcome benefits of NIV use and compare the difference in outcome benefits of NIV use in the H1N1 patients during the previous year. **Materials and methods:** Retrospective analysis of the COVID pneumonia patients admitted to ICU over one year period in our multi-speciality tertiary care hospital in south India was undertaken. Details were collected from the electronic charting and patient files retrospectively. The data on the usage of non-invasive ventilation as the initial mode of ventilation for hypoxic respiratory failure in these patient groups were analysed. The findings were compared with the data from the H1N1 pandemic patients in 2018 collected from our ICU. The outcome benefit in terms of subsequent invasive ventilation need, mortality and duration of ICU stay were measured. **Results of COVID patients:** Average age of patient was 62.6 years and male:female ratio was 50%. All patients had associated significant co-morbidities. Average duration of symptom prior to ICU admission was 5.1 days. Length of ICU days was at an average of 6.75 days with 2–18-day variation. 66% had Severe ARDS. In 83% of patients NIV was used and 16% had HFNC and 41% had both NIV and HFNC during the stay. Overall 41% needed invasive ventilation. Only 30% of those who were on NIV went to receive invasive ventilation. Overall mortality was at 41%. Results compared with H1N1 patients: 78.6% of H1N1 patients received NIV, of which 42% improved, but 57% needed invasive ventilation when compared to 30% in COVID pneumonia. However, mortality was 36%, which was lower compared to COVID patients. **Conclusion:** Significant proportion of COVID patients when compared to H1N1 had probably benefited from NIV usage. Whether NIV delayed the needed intubation early is not clear and would it have prevented mortality is not clear either. HFNC is newer mode of Non-Invasive ventilation mode that has gained popularity during the COVID pandemic. There is significant mortality associated with the second wave of COVID pandemic from our experience of treating patients with severe ARDS. **Conflict of interest:** None declared by any of the authors.

### 187. Survival of Older People Living In Residential Care Following Intensive Care Unit (ICU) Admission (The ICU Residential Care Facility Patient Study) (Conference Abstract ID: ABS0187)

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**ABSTRACTS CRITICARE – IJCCM2022**
Materials and methods: Retrospective, observational, cohort study of residents of residential aged care facilities, admitted to 2 ICUs in NSW, Australia between 2011 and 2016 with the primary objective of looking at 2-year survival of such patients. Secondary outcome measures included in-hospital, 30-day, 6-month, and 1-year survival. Background: The outcomes of older patients admitted from residential care facilities to the ICU are unclear. The objective of this study was to determine the 2-year survival of older patients from residential care facilities admitted to an ICU in NSW, Australia.

Aim and objective: Retrospective, observational, cohort study in two ICUs. Data from all patients admitted to the ICUs from residential care facilities between 1st January 2011 and 31st December 2016 were matched with the NSW Registry of Births, Deaths and Marriages (NSW RDBM) database to determine 2-year survival. Results: There were 405 patients admitted to the ICU from residential care facilities. The mean age was 76 years and 58% were females. The mean Acute Physiology and Chronic Health Evaluation (APACHE) II score was 17. The proportions of patients who received invasive ventilation, non-invasive ventilation (NIV), and renal replacement therapy (RRT) were 4%, 5%, and 21%, respectively. The overall 2-year survival was 68%. The survival to ICU discharge, 30 days, 6 months, and 1 year was 93% (377 patients), 86% (347 patients), 78% (315 patients), and 73% (297 patients), respectively. The 2-year survival of patients who received invasive ventilation, NIV, and RRT was 41%, 63%, and 59%, respectively. Conclusion: This study demonstrated that more than two-thirds of patients admitted to the ICU from residential care facilities survived 2 years or more, and more than half of the patients who received NIV or RRT in the ICU survived 2 years or more. This demonstrates that residing in a residential care facility on its own does not necessarily portend a poor survival outcome for patients admitted to the ICU.

Aim and objective: Retrospective, observational, cohort study in two ICUs. Data from all patients admitted to the ICUs from residential care facilities between 1st January 2011 and 31st December 2016 were matched with the NSW Registry of Births, Deaths and Marriages (NSW RDBM) database to determine 2-year survival. Results: There were 405 patients admitted to the ICU from residential care facilities. The mean age was 76 years and 58% were females. The mean Acute Physiology and Chronic Health Evaluation (APACHE) II score was 17. The proportions of patients who received invasive ventilation, non-invasive ventilation (NIV), and renal replacement therapy (RRT) were 4%, 5%, and 21%, respectively. The overall 2-year survival was 68%. The survival to ICU discharge, 30 days, 6 months, and 1 year was 93% (377 patients), 86% (347 patients), 78% (315 patients), and 73% (297 patients), respectively. The 2-year survival of patients who received invasive ventilation, NIV, and RRT was 41%, 63%, and 59%, respectively. Conclusion: This study demonstrated that more than two-thirds of patients admitted to the ICU from residential care facilities survived 2 years or more, and more than half of the patients who received NIV or RRT in the ICU survived 2 years or more. This demonstrates that residing in a residential care facility on its own does not necessarily portend a poor survival outcome for patients admitted to the ICU.
pandemic is progressing. Mucormycosis emerged as a major health care problem with lots of morbidity and mortality, especially in the Indian subcontinent. Overzealous use of immunosuppressants along with uncontrolled diabetes was the major causative factor. Early diagnosis and early surgical debridement was the key to survival.

191. Diagnostic Accuracy of ROX-HR Index in Predicting HFNC Outcome in Adult Patients with Hypoxic Respiratory Failure: Prospective Observational Study (Conference Abstract ID: ABS0191)
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Aim and background: The ROX index (ratio of pulse oximetry/FiO2 to respiratory rate) has been validated to predict high flow nasal cannula therapy (HFNC) outcomes in patients with pneumonia. Modified ROX criteria that incorporating heart rate appears to be a promising tool in the early identification of patients who are at high risk of HFNC failure in patients initiated on HFNC for acute respiratory failure. The relevance of ROX HR index has not been studied in the Indian population with acute hypoxic respiratory failure. Objective: Our study is conducted to determine the sensitivity and specificity of ROX HR index measured at 4 hours and 10 hours after initiation of HFNC therapy in predicting HFNC outcome in patients with acute hypoxic respiratory failure. Materials and methods: The study design is a single-centre, open-label, prospective observational study. 45 patients admitted in multi-disciplinary ICU with acute hypoxic respiratory failure initiated with HFNC therapy were included. ROX-HR index was defined as the ratio of ROX index over heart rate (beats/minute), multiplied by a factor of 100. ROX HR index was calculated at the 4th hour and 10th hour after initiation of HFNC. Based on the outcome, patients were divided into two groups. The first group was those liberated from HFNC and the second group was those who failed HFNC and progressed to mechanical ventilation. Comparison and analysis of ROX HR index are done between these two sets of patients – HFNC success group and HFNC failure group. Evaluation was performed using the area under the receiving operating characteristic curve (AUROC) and cutoff values were assessed for prediction of HFNC failure which was defined as the need for mechanical ventilation. Results: 45 patients were initiated on HFNC for acute hypoxemic respiratory failure. The majority of patients had COVID-19 pneumonia as a primary diagnosis. 30 patients were liberated from HFNC to venture mask while 15 patients were liberated from HFNC to mechanical ventilation. Comparison and analysis of ROX HR index were done using the area under the receiver operating characteristic curve (AUROC) and cutoff values were assessed for prediction of HFNC failure which was defined as the need for mechanical ventilation. Conclusion: ROX-HR index appears to be a promising tool for early identification of treatment failure in patients initiated on HFNC for acute hypoxemic respiratory failure.

193. Prognostic Performance of Sofa Score in Conjunction with Inflammatory Markers in Critically-Ill COVID-19 Patients (Conference Abstract ID: ABS0193)
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Aim and background: COVID-19 pandemic is still posing a great challenge to the global healthcare system. Accumulating evidence from various studies suggests that the serum levels of inflammatory markers have the potential in determining the severity of disease, and possibly may serve as potential prognostic biomarkers for COVID-19. Increased levels of inflammatory markers such as interleukin-6 (IL-6), procalcitonin (PCT), C-reactive protein (CRP), and ferritin, are found to be associated with poor clinical outcomes in severe patients. Application of scoring system for critically-ill COVID-19 patients facilitates intensivists for prognosis and predicting mortality. However, no such scoring system is yet available for COVID-19. Therefore, the existing scoring systems, Acute Physiology and Chronic Health Evaluation II (APACHE-II) score, and Sequential Organ Failure Assessment (SOFA) score are used to assess disease severity and estimate mortality in critically ill COVID-19 patients. Materials and methods: This is a single-center, observational cohort study, conducted in Max Superspeciality Hospital, Vaishali, Ghaziabad, U.P. (India). The study included 80 critically ill COVID-19 patients admitted to ICU from 3rd August to 2nd October 2020. The patients were followed up for 28 days or until their death. The core outcome was 28 days mortality in COVID-19 patients admitted to ICU. SOFA score was calculated from the time of admission (0 hours) up till 96 hours of ICU stay, to predict the severity of the disease. The levels of inflammatory markers (serum levels of IL-6, d-dimer, procalcitonin, C-reactive protein, and ferritin) were measured at the time of admission (0 hours) and 96 hours after admission. The statistical analysis was performed using IBM Statistical Product and Service Solutions (SPSS) version 17.0. Results: Among the 80 patients admitted to the ICU, 56 survived while 24 patients died at the hospital. Comorbidities were present in 60 patients, with diabetes being the most common, followed by hypertension. At 96 hours of admission to ICU, the SOFA score was significantly higher in non-survivors than survivors (3.75 ± 2.94 vs 2.16 ± 0.87; P < 0.001). Multivariable regression analysis showed significantly increased odds of mortality associated with higher SOFA score (OR - 2.228 [95% CI: 1.220–4.068], P = 0.009) and Procalcitonin levels (OR - 1.983 [95% CI: 1.129–3.485]; P = 0.017) at 96 hours of admission. The ROC analysis showed SOFA score ≥4 and PCT ≥0.6 as cut-off values. Conclusion: The present study indicates that using SOFA score along with procalcitonin could function as an effective prognostic tool to predict 28-day mortality in critically-ill COVID-19 patients. However, increased PCT levels could be due to bacterial co-infections, hence additional studies are required to assess the validity of PCT in critically ill COVID-19 pts.
194. Role of Pocus in Evaluating Respiratory Failure: A Prospective Observational Study (Conference Abstract ID: ABS0194)
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Aim and background: Early recognition and appropriate treatment of respiratory failure have been shown to decrease mortality. We wanted to evaluate BLUE protocol for the patients admitted to the hospital with respiratory failure. Objective: To evaluate the role of point of care ultrasound (POCUS) in assessing different types of respiratory failure in a tertiary care hospital. Materials and methods: A single-center prospective observational study was conducted at the Citizens specialty hospital, Hyderabad between January 2020 and September 2021. All patients with age >18 years with respiratory rate >24/minute, or requiring oxygen, invasive and non-invasive mechanical ventilation support were included. POCUS examination was performed within 30 mins and at 6 hours after admission to the hospital as per BLUE protocol. All patients were evaluated and treated as per the hospital policy. We collected all the clinical, biochemical parameters and CT chest reports from the case sheet after 6 hours of admission (i.e., after the 2nd POCUS assessment). All demographic parameters, initial vitals, modalities of oxygen therapy, vasopressor use were monitored. The final diagnosis of respiratory failure was confirmed after discussion with admitting specialist and ICU team. The POCUS findings, CT findings, clinical and biochemical findings were compared with the final diagnosis.

Results: 94 patients were enrolled in this study. The baseline mean characteristics were age 60.04 years, males 53%, females 47%, HR-109/minute, MAP-97 mm Hg, SpO2 82%, respiratory rate 24/minute. Of 94 patients, utilization of oxygen, NIV, and invasive mechanical ventilation were 25, 54, and 15, respectively. Observed clinical, POCUS, and CT diagnoses matched with the final diagnosis were 84%, 63%, and 75%, respectively. POCUS identified 35% consolidation, 90.4% interstitial syndrome, 100% pneumothorax, 95% of pleural effusion, 100% of Exacerbation of COPD, and 100% of acute pulmonary thromboembolism. Specificity and sensitivity of POCUS findings matched with final diagnosis 70% in both. The positive predictive value and negative predictive value of POCUS matched with the final diagnosis are 95% and 21%, respectively. CT diagnosis matched with the final diagnosis was 75%. The specificity and sensitivity of CT matched with the final diagnosis are 96% and 50%, respectively. The positive predictive value and negative predictive value of CT diagnosis matched with the final diagnosis are 95% and 21%, respectively. POCUS has the least diagnostic accuracy in consolidation, most of these patients were diagnosed with interstitial edema as the consolidation changes in the lung may not be seen in the early phase of the disease.

Limitations: (a) The POCUS data are not validated by the expert team, (b) All the collected data were not validated by the internal audit team.

Conclusion: Based on our study, POCUS will be helpful to differentiate various types of respiratory failure. POCUS and clinical-based assessment together will have increased accuracy in diagnosing the cause of respiratory failure. Early use of POCUS aids in diagnosing and managing respiratory failure which is shown to decrease mortality and morbidity.

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197. Basic Demographics and Outcome of COVID-19 Patient Admitted in Tertiary Care Center, Surat (Conference Abstract ID: ABS0197)

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Introduction: COVID-19 pandemic started from Wuhan, China, and has spread across the world and whole humanity passed through this havoc of this pandemic. Healthcare system became overburdened due to scarcity of manpower and resources. Large number of cases treated in our hospital, here we are publishing our retrospective data of basic demographics and outcome of COVID-19 patients admitted in a tertiary care center in Surat.

Materials and methods: This is a retrospective single-center study of demographics and outcomes of COVID-19 patients admitted to Sunshine Global Hospital between June 2020 and July 2021. Data were collected from the hospital information system and analysed. These all patients are diagnosed on basis of rapid antigen and, or RTPCR reports along with HRCT of the chest.

Results: A total of 1525 COVID-19 patients were admitted between June 2020 and July 2021. Out of those patients, complete data of 1514 is available, among them, 1036 [68%] were males with a mean age of 54 years and 478 [32%] were females with a mean age of 55 years. The average length of stay in the hospital was 7 days. 1412 [93.2%] survived and 98 [6.4%] died. Among 297 [19%] patients admitted to ICU admission, 120 [7.9%] patients required intubation. Mean age was 55 years. Average length of stay [LOS] in ICU was 7 days and LOS in the hospital was 11 days. In the intubated patient, the average duration of ventilator support was 7 days. Tracheostomy was done in 43 [2.8%] patients. Out of 120 intubated patients, 44 survived and were discharged after an average in-hospital stay of 15 days, while 76 patients could not survive. Survival rate in ICU patients was 69.4% and among those requiring invasive mechanical ventilation 36.7%.

Conclusion: Protocollased system of care helped limiting the mortality in the COVID-19 pandemic. Large majority of those who are intubated and survived required tracheostomy, prolonged mechanical ventilation, ICU, and hospital LOS.

198. Effect of Real-time Feedback Device on Quality of Chest Compression During Training of Cardiopulmonary Resuscitation (Conference Abstract ID: ABS0198)

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Introduction: Quality of chest compression is the most important factor affecting the rate of ROSC. Effect of real-time chest compression feedback device in addition to classroom teaching by audio-video aids on the trainees of BLS course remains to be seen. We used “CPR ASSIST” [Nihon Kohden, Tokyo, Japan], for real-time audio and video feedback. Materials and methods: This is a before and after study using CPR assist device, where AHA certified BLS course attendees were asked to perform chest compression on a mannequin before the BLS course while keeping them blinded about real-time feedback and with real-time feedback after the course. We measured the quality of chest compression by various parameters like depth, tempo[speed], release[recoil], vertical compression[0–15cm], duty cycle, flow time[compression fraction], and overall ratio as generated by the CPR ASSIST device software.

Results: This study was done on 28 candidates. Before and after median and range of percentages of good chest compressions were as follows. Depth 6% (0–100); 69% (20–100) [p value < 0.001], tempo 8% (0–94); 73.5% (34–98) [p value < 0.001], release 98% (17–100); 98% (68–100) [p value 0.192], vertical compression 95% (3–100); 100% (21–100) [p value 0.726], duty cycle 95% (0–100); 100% (76–100) [p value < 0.015], flow time 98% (88–100); 100% (83–100) [p value < 0.592], overall ratio 39% (31–84); 79.5% (59–93) [p value < 0.001].

Conclusion: Real-time feedback device improves the overall quality of chest compressions on manikins among BLS trainees. Depth and tempo of chest compression improved the most with the use of real-time feedback with the CPR assist device.

Discussion: Availability of real-time feedback devices will improve the quality of chest compression and hence improve the chance of survival in cardiac arrest victims.

199. Series of 2 Cases of Abdominal Compartment Syndrome in Dengue Shock Syndrome (Conference Abstract ID: ABS0199)

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Introduction: Polyserositis along with abdominal compartment syndrome is under-diagnosed in dengue shock syndrome.

Materials and methods: Increased abdominal compartment pressure, as measured by urinary bladder method to diagnose abdominal compartment syndrome and treated with repeated ascitic tapping, bowel decompression, sedation, and neuro paralysis. Its effects on organ dysfunction are noted. Case-1: A 20-year-old male was admitted with a complaint of high-grade fever with chills, headache, body ache, and diagnosed as dengue
shock syndrome with severe thrombocytopenia and polyserositis. His intraabdominal compartment pressure [IAP] was 16 mm Hg. Ascitic tapping was deferred in view of coagulopathy. With other measures to reduce abdominal compartment pressure including diuretics and after hemodialysis, IAP reduced to 14 mm Hg. Partial improvement was found in liver enzymes, ventilating pressures due to the same but eventually died. Case-2: A 23-year-old male was admitted with a complaint of high-grade fever with chills, severe weakness, abdominal pain headache, and body ache and diagnosed as dengue shock syndrome along with abdominal compartment syndrome with multiorgan failure (AKI, acute liver failure, hypotension, hypoxic respiratory failure). His first IAP was 22 mm Hg. Along with sedation, paralysis, NG aspiration, enema, fluid restriction, hemodialysis; ascitic tapping was done under cover of blood products [for coagulopathy]). Post ascitic tapping IAP was 9 mm Hg with improvement in liver enzymes, ventilatory parameters, and even inotropic requirements. Despite controlling IAP with repeated ascitic tapping multiorgan failure progressed with fatal outcome.

Conclusion: Abdominal compartment syndrome in dengue shock syndrome is a serious complication. Its prevention, timely diagnosis, and management require more attention in dengue management guidelines and protocols.

200. Incorporation of Tocilizumab into an Evidence Informed Guideline: An Evidence to Decision Approach (Conference Abstract ID: ABS0200)

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Aim and background: COVID-19 was a new disease-causing a pandemic and hence generated uncertainty, and a great deal of anxiety with regard to appropriate therapeutic interventions. Many treatment regimens were tried with no evidence supporting the same. Critical and fatal COVID-19 due to immune dysregulation results in severe inflammation or a cytokine storm with markedly elevated pro-inflammatory cytokines like interleukin-6 (IL-6). Tocilizumab, an IL-6 receptor antagonist, is reported to prevent disease progression. However, since this is an expensive intervention, it is important that evidence is reviewed systematically regarding its utility. The India COVID guidelines is a group of experts and methodologists who came together to use a process of evidence synthesis to inform treatment guidelines using an evidence to decision framework (www.indiacovidguidelines.org). We report the data regarding tocilizumab in severe to critical COVID-19 infection. Objectives: To assess the efficacy and safety of tocilizumab in patients with COVID-19. Materials and methods: Search methods: We performed a systematic search till 15.10.2021 of the following databases: Pubmed, WHO ICTRP, LOVE platform, Cochrane library, and COVID-NMA. Selection criteria: We selected only randomised controlled trials (RCT) evaluating tocilizumab use in COVID-19. Data collection and analysis: Two review authors independently screened and identified studies using Rayyan, did a risk of bias assessment using the Cochrane ROB 2 tool and extracted numerical data from studies for outcomes like all-cause mortality, disease progression, clinical improvement, and adverse events. Meta-analysis was performed using Review Manager 5.4.7 statistics were used to measure residual heterogeneity. Certainty of evidence was evaluated using GRADE methodology. A group of experts then used the WHO evidence to decision framework to judge values and preferences, and a recommendation for tocilizumab applicable to a lower-middle-income country was generated.

Results: Our search retrieved 1408 abstracts from various databases. Twenty-three RCTs were included in this systematic review with 10,583 participants. All participants were hospitalised adults with moderate to severe disease with an average age of 54–65 years. Median C-reactive protein was ≥ 100 mg/L indicating significant systemic inflammation. Prevalence of comorbidities varied and tocilizumab was initiated in rapidly worsening patients within 24–48 hours of admission to intensive care in most trials. More than 80% of participants were administered corticosteroids. Tocilizumab-treated patients showed a significant reduction in mortality with RR 0.88 (95% CI 0.81, 0.94) and reduced disease progression with RR 0.87 (95% CI 0.72, 1.06) with moderate certainty of the evidence, increased clinical improvement with RR 1.04 (95% CI 1.00, 1.09), and reduced time to clinical improvement with HR 1.22 (95% CI 1.14, 1.30) with low certainty of evidence. There was very low certainty in the evidence for adverse events and serious adverse events. Secondary infections were uncommon in most trials with follow-up till 14 or 28 days, which may have been too early to detect the same. Conclusion: A systematic review and meta-analysis which generated efficacy data of tocilizumab was then applied to an evidence to decision framework by subject experts resulting in a robust evidence-informed guideline applicable to any Indian secondary or tertiary healthcare setting.

202. Effect On Mortality and Comparison of Baseline Characteristics of Patients with Elevated Procalcitonin Levels (>50 ng/mL) (Conference Abstract ID: ABS0202)

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Objectives: (1) To determine the outcome of patients with elevated procalcitonin values. (2) To compare the baseline characteristics of patients with elevated procalcitonin levels at admission. (3) To correlate blood investigations and culture reports of patients with elevated procalcitonin levels. Materials and methods: This is a retrospective cross-sectional study. The study is carried out on 52 patients admitted to the intensive care unit of Lisie Hospital, Kochi (a tertiary multi-speciality hospital) between 1st March 2021 to 1st September 2021. Detailed history, baseline blood investigations, procalcitonin levels, and appropriate culture reports have been collected. Only patients with procalcitonin levels of >50 ng/L measured within 2 hours of admission have been included in the study. Results: Out of 52 patients, 57% of patients survived beyond 28 days. Culture positivity was obtained in more than half of the patients (60%) with very high procalcitonin levels. Only 55% of patients with co-infection with COVID showed 28-day mortality. Out of all culture-positive cases, blood culture revealed maximum positivity rates. Almost 43% of polymicrobial infected patients suffered 28-day mortality. Mortality rates were very high in patients who required invasive mechanical ventilation especially COVID co-infected patients. The mortality of patients in the lower age group (<50 years) had better 28-day survival but is not found statistically significant. Conclusion: Sepsis and complications of
sepsis are major causes of mortality in critically ill patients. Rapid treatment of sepsis is of crucial importance for the survival of patients. The status of the critically ill patient is often difficult to assess because symptoms cannot be expressed and signs may present atypically. Procalcitonin level being a reliable indicator of bacterial infection is also considered to be a marker of severity of infection. According to our study more than half of the patients had 28-day survival despite very high procalcitonin levels. But patients requiring invasive mechanical ventilation revealed very poor survival rates especially COVID-19 co-infected patients. Females and younger age patients showed a better survival rate but were not statistically significant. In patients for whom adequate source control was attained, better survival was observed. The most common organisms revealed in culture reports were *Klebsiella pneumoniae*, *E. coli*, polymicrobial, *Pseudomonas aeruginosa*, and beta-hemolytic streptococci. Of the above-mentioned organisms, beta-hemolytic streptococci, followed by polymicrobial, *Klebsiella pneumoniae*, and *Pseudomonas*, respectively, caused maximum mortality. Determination of procalcitonin levels may be useful in the ED to identify patients with severe systemic non-viral infections and predict the outcome of the patient.

### 203. Paediatric Mediastinal Masses: Case Series: Intensivist Perspective (Conference Abstract ID: ABS0203)

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**Introduction:** Mediastinal masses in the paediatric population pose a challenge for diagnosis and acute management especially when they present with compression of mediastinal structures. **Objectives:** To study clinical, radiological, and pathological characteristics, treatment, complications, and outcome of patients with mediastinal masses admitted to IPCU with emphasis on respiratory support provided. **Materials and methods:** Retrospective analysis of medical records of patients admitted with mediastinal masses between 1st July 2020 and 31st October 2021 in PICU at BJ.Wadia Hospital for Children. **Results:** 10 patients (6 months to 16 years) were included. The common presenting symptoms were breathlessness (90%), orthopnea (44%), cough (40%), fever (40%), and weight loss (20%). One patient had superior vena cava syndrome, 50% had hepatosplenomegaly/lymphadenopathy. One patient was diagnosed outside as a yolk sac tumour and referred. Three patients were wrongly treated as TB before they were referred. The average duration of symptoms before presenting to the hospital was 82.7 days. Airway compression was seen on a CT scan in 6/10 patients. Mechanical ventilation was required in 6 patients and non-invasive ventilation in three. The mean duration of mechanical ventilation was 13.1 days. All the patients required PEEP > 7 cm H2O, propped up position, and intermittent desaturations requiring an increase in ventilator settings for a short duration of time or use of paralytics/sedation boluses. Difficult intubation was encountered in 2 patients of whom a smaller size tube was used in 1 patient. Bronchoscopy, LMA insertion was not required in any. Tissue for diagnosis was obtained by CT-guided or USG-guided LN biopsy; 80% needed a mediastinal mass biopsy. During the biopsy, procedural sedation was done using drugs propofol or ketamine which was well tolerated. CT-guided retroperitoneal lymph node biopsy was inconclusive in 1 patient and eventually required open inguinal lymph node biopsy. Final diagnoses included: T cell ALL in 2 patients, AML, classical Hodgkin’s lymphoma, neuroblastoma, alveolar rhabdomyosarcoma, yolk sac tumour, teratoma, tuberculosis, in single cases. Definitive diagnosis could not be confirmed in 1 child though blood EBV PCR came positive (viral copies > 10^5 copies/mL) after the child expired. The mean time from symptom onset to diagnosis was 90 days. The mean time from presentation to diagnosis was 7.2 days. The mean duration of IPCU stay was 15.8 days. Patient with yolk sac tumour was COVID-19 positive who later developed peripheral digit gangrene. 7 patients received chemotherapy, 1 patient received AKT and one underwent surgical resection of tumour. Complications encountered were AKI (10%), TLS requiring hemodialysis (10%), and chylothorax (10%). Mortality was 50% of whom 2 did not respond to chemotherapy and 3 had intercurrent events. 5 children were discharged from the unit. **Conclusion:** At our centre, mediastinal masses are frequently malignant in origin. Though TB is common in our country, not all mediastinal masses are TB. All the effort should be made to obtain microbiological/tissue diagnosis before initiating the treatment. Intubating and ventilating a mediastinal mass is a challenging task and those who require intubation have a poor prognosis. Late diagnosis and associated poor prognosis are glaring, prompting for early intervention to improve outcome.

### 204. Bupivacaine–Ropivacaine Induced Sudden Cardiac Arrest: A Anaesthetic Misadventure and Physician Nightmare (Conference Abstract ID: ABS0204)

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**Aim and background:** The cardiotoxic effect of accidental intravascular injection of local anesthetics is a rare but well-known fact that can lead to hypotension, cardiac arrhythmia, asystole, or sudden cardiac death. **Objectives:** There is a false perception among most surgeons and some anesthesiologists that regional anesthesia is “safer” than general anesthesia. Local anesthetic systemic toxicity (LAST) remains a real danger of regional anesthesia. Though its incidence is <0.2%, LAST is difficult to treat and is potentially fatal. **Materials and methods:** Herein, we report a 13-year-old female who was posted for elective humerus implant removal in a private hospital. Preoperative evaluation was unremarkable. Patient was given a right supraclavicular block with injection of ropivacaine and bupivacaine combination, following which immediately she had an episode of convulsion and cardiorespiratory collapse. Cardiopulmonary resuscitation (CPR) was initiated, and the patient was given epinephrine, atropine, midazolam followed by infusion of norepinephrine and dopamine. Patient developed pulmonary oedema and was mechanically ventilated. She was then transferred to our tertiary care center for further management. On transfer, patient had hypotension, was semi-conscious but eventually recovered over 3 days in the intensive care unit with supportive therapy and intralipid infusion. **Conclusion:** This case highlights a few important ethical issues for this teenage girl whose life was put at stake because of the erroneous administration of anaesthesia. Firstly, the patient received a blind supraclavicular block using peripheral nerve stimulation. However, the same when given under ultrasound guidance has not only less incidence of LAST but also
achieves adequate blockade using exceedingly small doses of local anesthetics and even helps in early detection of accidental intravascular injection. Secondly, she received a combination of two local anaesthetics whose safer dose when given individually though know, but the safer dose in combination is difficult to predict and, thus it should have been avoided. Lastly, despite the patient having a classical cascade of LAST the diagnosis of the same was missed, intralipids was not given immediately and patient was referred to a different center. Early treatment with intralipids may prevent cardiac arrest and speed resuscitation efforts, hence intralipids should always be available with resuscitation drugs whenever local anesthesia is administered. So though the LAST occurrence in our case was unpredictable and unfortunate but it could have been prevented by taking extra precautions. Hence, we leave it to the discerning reader to decide whether the catastrophe was a misadventure or a negligence on the part of the anesthesiologist.

### 207. Traumatic Brain Injury (TBI) Induced Coagulopathy- Readdressing the Dubiety Using Viscoelastic Method (Conference Abstract ID: ABS0207)

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**Aim and objective:** Traumatic brain injury is known to cause coagulopathy. However, the representation of coagulopathy remains uncertain in TBI. The viscoelastic techniques like Sonoclot evaluate the cell-based coagulation analysis and have not been assessed in traumatic brain injury. With this background, the study aims to determine the incidence of different coagulation parameters using SONOCLOT (SONACT, Clot rate, Platelet function, Time to peak and peak amplitude) and conventional coagulation assay (INR, aPTT) in patients of severe TBI with different CT findings. Additionally, the association of type of injury in CT with different phases of haemostasis (hypo and hyper coagulopathy) parameters provided by SONOCLOT were assessed.

**Materials and methods:** Sixty patients with severe head injury between ages 18 and 65 years were evaluated using conventional coagulation assays (PT, aPTT, INR) as well as sonoclot parameters (SONACT, CR, PF, TP, PA) at arrival (0 hours), 24 hours and 48 hours. The parameters were observed with patients with different CT lesions. The patients were followed after a period of 1 month for outcome by observing Glasgow Coma Scale (GCS). Data were evaluated using SPSS and Chi-square test was applied to see the significance of different SONOCLOT variables and conventional assay variables in the development of coagulopathy.

**Results:** Sonoclot analysis depicted an overall incidence of hyper/hypo coagulation as 3:1. The hyper-coagulopathy state was evident from lower SONACt values and higher Clot rate at 0 hours. The coagulopathy trend observed by SONACT values amid 0–24 hours was observed statistically significant between different types of lesions ($p=0.019$). The hyper coagulopathy trend observed by clot rate was statistically significant ($p=0.04$) amid 0 to 48 hours in contusion. The trend in time to peak and peak amplitude had a statistically significant association with CT lesions. The time to peak was significantly associated with contusion and Acute SDH while peak amplitude was significantly associated with DAI, contusion, and acute SDH. Among all the lesions, diffuse axonal injury and acute subdural hemorrhage demonstrated higher hyper coagulative propensity.

### 208. Outcome of Patients before and after Implementation of RRT in a Tertiary Hospital (Conference Abstract ID: ABS0208)

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**Aim and background:** Although the evidence for rapid response team (RRT) effectiveness remains uncertain, RRT are implemented across many hospitals in the world. We aimed to determine the impact of RRT on outcomes in our hospital.

**Materials and methods:** Our hospital is a 30-bedded non-COVID-19 tertiary care teaching hospital. We collected prospective observational data after implementation of the RRT (February 1, 2021, to September 30, 2021, RRT Period) for a period of 8 months and compared it with retrospective cohort data for 8 months before implementation (February 1, 2020, to September 30, 2020, control period). We conduct a 12th hourly team round consists of a Critical care physician, Anesthesiologist, Duty RMO, Duty Medical officer, and Nurse Supervisor. All the ward patients in the hospital were charted with a Modified early warning score (MEWS) and RRT enrollment will be done if the score is >5 or a single variable score of 3. If the final MEWS ≥ 7 will be transferred immediately to the ICU. The outcomes monitored were hospital mortality and morbidity.

**Results:** During the Control period (February 2020 to September 2020), we analyzed 5522 hospital admissions and 18951 patient days of which 77 patients were transferred to ICU, and mean age of these patients is 55.17 years. Male patients were 53, average length of stay post ICU transfer 4.27 days, of transferred patients medical are 66 and surgical are 11. Death of ICU transferred patients is 14. Number of code blue and death in the ward during this period is 22 and 21, respectively. During RRT period, we analyzed 6956 hospital admissions and 24072 patient days of which 83 patients were transferred to ICU, and mean age of these patients is patients is 58.12, male patients were 55, average length of stay post ICU transfer 3.6 days of which medical are 53 and surgical are 30. Death in ICU transferred patients is 8. Number of code blue and death in the ward during this period is 25 and 43 respectively. Of 43 ward deaths 18 contribute for DNR.
Most common reason for transfer to ICU is respiratory failure, Oncology patients were predominant in both groups. The RRT was activated 83 times (11.9 calls per 1,000 patients and 3.44 calls per 1,000 patient-days). The Code blue rate for Control vs RRT were 1.16 and 1.03 per 1,000 patient days, respectively. The hospital mortality for control vs RRT were 1.84 and 1.78 per 1,000 patient days, respectively. The length of stay for control vs RRT were 0.22 and 0.14 per 1,000 patient days, respectively. The ICU mortality of transferred patients for Control vs RRT were 0.73 and 0.33 per 1,000 patient days, respectively. We found a decrease in the trend in code blue rate and hospital mortality in the ward, length of stay, and mortality in ICU transferred patients in the RRT period compared with the control period. **Conclusion:** We observed a trend towards decline in mortality and morbidity after implementation of RRT, and continuing for a longer duration may give us robust data.

**210. Reporting a Case Series of CMV Reactivation in COVID Patients** (Conference Abstract ID: ABS0210)

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The current pandemic caused by SARS-CoV-2 virus infection has provoked an unprecedented health care burden worldwide with an abrupt demand for critical care provision and consequent strain on the intensive care unit (ICU). A history of cytomegalovirus (CMV) infection is very common among adults, the majority of which evolve with a period of latency characterized by a persistent control of viral replication [2]. Reactivation usually implies some type of weakened immunity which can be attributed to various etiologies [3]. Nevertheless, infection of immunocompetent patients in the ICU is well acknowledged, with the highest reactivation rates in septic patients. Furthermore, CMV reactivation is associated with higher ICU length of stay, longer need for invasive mechanical ventilation (IMV), increased risk of infections, and mortality. We report a case series of eight patients admitted to the ICU due to SARS-CoV-2 pneumonia who presented concomitant CMV infection/reactivation during hospital stay.

**211. Incidence, Resistance Patterns, and Outcomes of Secondary Bacterial and Fungal Infections in Critically Ill ICU Patients in the 2nd Wave of the COVID-19 Pandemic** (Conference Abstract ID: ABS0211)

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**Aim and background:** The COVID-19 pandemic has raised significant concerns over secondary infections because of the widespread use of steroids, immunomodulators, and empiric antimicrobials as part of the recommended treatment protocol. Various studies have shown that COVID-19 infection by itself predisposes to secondary infections. During the 2nd wave of the COVID-19 pandemic, there has been an unprecedented epidemic of secondary invasive fungal infections. This study analyses the prevalence, details, and outcomes of secondary infections in critical COVID-19 patients admitted to a tertiary intensive care unit (ICU) in India. **Materials and methods:** Retrospective study of secondary infections in ICU patients between April and June 2021. Demographic data, details of immunomodulator therapy, secondary bacterial and fungal infections, antimicrobial susceptibility data, and clinical outcomes of these patients were analyzed. **Results:** 71/238 (29.83%) ICU patients developed secondary bacterial and fungal infections. The mortality in patients with secondary infections was significantly higher [80.28% (p < 0.05)], compared to overall ICU mortality of 51.68%. In patients with secondary infections, 67.6% were referred from other hospitals after receiving initial treatment and 64.79% had received various immunomodulator therapies. Patients on prolonged mechanical ventilation (>7 days) and indwelling central venous (>7 days) and urinary catheters (>7.5 days) had higher secondary infection rates and higher mortality. There was positive significant growth in 80 respiratory samples, 34 blood samples, and 17 urine samples. Gram-negative bacteria were isolated in 85.91% and 32.39% had fungal isolates. *Klebsiella pneumoniae* followed by *Acinetobacter baumannii* were the predominant bacteria and *Candida spp* followed by *Mucormycosis* were the predominant fungal pathogens. Multi-drug resistant (MDR) infections were common among the isolates (70.59%), 49.3% of secondary infection patients had polymicrobial infections including fungal infections with higher mortality of 83%. **Conclusion:** There is a significantly high incidence of secondary MDR bacterial and fungal infection including *Mucormycosis* in critically ill COVID-19 patients, with an adverse impact on mortality. Risk factors included the use of steroids, immunomodulators, severe COVID-19 infection, empiric broad-spectrum antibiotics, invasive ventilation, and central venous and urinary catheterization, and prolonged ICU stay.

**212. Surfactant Dysfunction Disorder: Case Report** (Conference Abstract ID: ABS0212)

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**Introduction:** Genetic surfactant dysfunction disorders are rare disorders caused by an alteration in genes encoding proteins (ABCA3, SP-A, SP-B, SP-C, SP-D) critical for the production and function of pulmonary surfactant. They are categorised under a group of disorders called the diffuse lung diseases and have uniformly poor outcomes without lung transplantation especially when they present in infancy. Multiple case reports of ABCA3 gene variations causing surfactant dysfunction disorder have been reported, no reports of surfactant protein C mutation have been reported in India. Our patient had 2 variants – ABCA3 and SP-C genes. **Case summary:** We report a 7-month-old infant who presented with severe respiratory distress following cough and fever for 2 days with failure to thrive. Child was a full-term born with birth weight appropriate for gestational age. Child developed respiratory distress within 3 hours of life hence admitted to NICU. Child had severe pneumonia and developed spontaneous pneumothorax during the course of treatment for which patient was mechanically ventilated for 8 days. There was no oxygen requirement post NICU discharge. This time, child presented with respiratory failure on the second day of illness. Child was admitted to PICU for 60 days, required mechanical ventilation for 56 days
including 2 days of High flow oscillatory ventilation. Serial chest radiographs were s/o progressive white-out of both lungs. Child required high ventilator settings with very high FiO2 requirement (>50%) and Mean Airway pressures in the range of 14–20 cm H2O. Worst Oxygenation Index recorded was 77 and PaO2/FiO2 ratio was 31. ET secretions were persistently positive for Klebsiella and Pseudomonas. Viral PCR for Parvo-B19, EBV, and CMV were negative. Child had received a wide range of broad-spectrum antibiotics in appropriate doses as per culture and sensitivity along with a 14-day course with methylprednisolone and a short course of dexamethasone. Bronchoalveolar lavage-Biofires did not reveal any pathogenic organism. Taking into account of such a prolonged course of illness, difficulty weaning from a mechanical ventilator with a stormy NICU course and FTT pointed towards an abnormal host. Immunology workup (NBT, LSSA) done was normal. Cardiac screening was normal. HRCT done was s/o consolidation in right upper lobe middle lobe and basal areas of both lobes and areas of smooth interstitial septal thickening with few conglomerated lung cysts in the apical region of left upper lobe-features s/o ARDS secondary to infectious etiology with the possibility of surfactant deficiency. BAL histopathology was inconclusive for pulmonary alveolar proteinosis (PAP). Hence, genetic testing was done which was positive for heterozygous intrinsic variation in exon 10 of the ABCA3 gene as well as heterozygous missense variation in exon 5 of the SFTPC gene. Despite all possible supportive care and management, child could not be salvaged. Conclusion: Congenital surfactant dysfunction disorders are rare but with the advent of newer genetic testing techniques are being increasingly recognised. Outcome remains poor without lung transplantation. Genetic testing and diagnosis aids in genetic counselling to prevent recurrences. More research is required to look for better modalities for diagnosis and treatment options.


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Introduction: The 1st wave of COVID-19 spread rapidly affecting most countries globally in a short duration. Many countries suffered the 2nd wave of COVID-19 infection, months after the 1st wave, largely driven by viral mutants with high transmissibility and reduced susceptibility to neutralising antibodies (1–3). Despite COVID-19 being the common etiology, the two waves have significant differences impacting both current understanding and future planning of the impact of COVID-19. This study from a tertiary ICU is a comparative analysis focusing on the cardinal differences in COVID-19 ICU patients between the two waves, with respect to baseline demographics, clinical features, disease severity, and outcomes. Materials and methods: Retrospective data was collected from the medical records of all patients with COVID-19 disease admitted to the intensive care unit (ICU) in the 1st and 2nd wave of the pandemic. COVID-19 disease was confirmed by means of a positive RT-PCR or a rapid antigen test (RAT) on a nasopharyngeal swab or respiratory sample. Baseline demographic and clinical data, disease severity, and outcomes were analysed. Results: 419 patients (74.9% males) were admitted to the ICU between July and December 2020 and 206 (65% males) patients between April and June 2021. The mean age of patients admitted in the 1st wave was 59.84 ± 13.7 (mean ± SD) years and the 2nd wave was 55.31 ± 14.9 years (p = 0.038). The duration from symptom onset to admission (Median, IQR) was 5 days (3, 7) for the 1st wave and 5 days (3, 8) for the 2nd wave. 74.5% (312/419) of the patients in the 1st wave and 64.5% (129/206) in the 2nd wave had one or more comorbidities (p = 0.05). The median CRP values were 83.0 mg/L (IQR 31.45, 159.7) for the 1st wave and 93.0 mg/L (IQR 48.0, 141.0) for the 2nd wave, respectively, statistically not significant. 31.8% (131/412) of the ICU patients in the 1st wave and 52.3% (103/196) in the 2nd wave required mechanical ventilator support (p < 0.05). The overall ICU mortality was 32.1% (134/418) for the 1st and 52.5% (104/198) for the 2nd wave (p value?). Conclusion: There is a significant difference between the 2 waves in age, comorbidities, and mortality, likely related to viral mutants, vaccination policies, and social mobility dynamics.

214. Comparison of Nutritional Pattern and Use Between Covid and Non-Covid ICU Patients (Conference Abstract ID: ABS0214)

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Introduction: Nutrition plays an important role in ICU patients, more so in hypercatabolic COVID-19 illness. Among other life-threatening problems, nutrition seemed to have taken a backseat in many hospitals due to logistics, reduction of manpower, isolation practices, etc. Objectives: To study the pattern and use of nutrition in our tertiary care COVID ICU in comparison to the non-COVID ICU. Materials and methods: An observational study was performed of 941 consecutive patients from March 2020 to June 2021 by collecting data from the iNUTRIMON software.1 In view of the various challenges faced in the delivery of appropriate nutrition and the hypermetabolic nature of the disease a COVID-specific nutrition protocol was formulated at the start of the pandemic.2 It involved the use of enteral scientific feeding formula for all COVID patients tolerating an oral diet. The protocol can be accessed at https://www.opensciencepublications.com/fulltextarticles/IJN-2395-2326-7-216.html. The energy was prescribed using simple predictive equations (i.e., 25 kcal/kg). In case of mechanically ventilated patients, indirect calorimetry-derived measures were used. All patients were prescribed 1.8 g/kg proteins. The protocol for nutrition patients remained the same with the exception that in non-COVID patients oral supplements were added only if 50% of the kitchen diet was not taken within 3 days. The use of TPN for both groups remained as per the protocol. The software iNutrimon calculated the scientific feeding formulae (product) based on the prescription of energy, proteins, and volumes, taking into account the viscosity and precise water requirement per scoop of formula feed. Results: The mean length of ICU stay of COVID patients was 9.31 days as compared to 6.8 days in non-COVID patients. 8.8% of the patients required TPN as compared to 1.4% of the non-COVID population. Only 0.6% of the total enteral feeding in the COVID ICU
was with kitchen diet alone compared to 7.8% in the non-COVID ICU. The incidence of use of supplemental nutrition was 97% per patient as compared to 57.6% per non-COVID patient. Among the scientific feeding formulae, the use of peptamen (85%) was highest in COVID patients as compared to 25% in non-COVID patients. The per-day cost of nutrition for COVID patients admitted to the ICU was found to be comparable to non-COVID patients when a cost analysis was done. Conclusion: There was a 168% increase in the use of scientific feeding formula and a 60% increase in the use of TPN in COVID patients as compared to non-COVID patients. This is also reflected as an increase in the cost of feeding. The use of TPN seems to suggest the increased intolerance to enteral nutrition. The increased use of scientific feeding formulae may indicate the adherence to protocol and also seems to suggest that COVID patients needed to be supplemented as kitchen feeds were unable to meet the requirements.

References

**Table 1:** Results with Ranks for FS_ICU 24 at our centre compared to 104 international centres

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± 13.4 years. The majority of respondents were satisfied with respect to the courtesy, respect, compassion (89.7%), and care (91.8%) their patient received which corresponded to 86th rank. Concerns and caring shown to the family members were valued by 88.7%, which ranked at 68th. The majority of respondents (94.8%) were satisfied with the care received from Doctors, including Residents for their family member and similar response (91.8%) was for Nursing and a ranking of 47th and 79th, respectively. Doctor’s and Nurse’s communication with respect to the patient’s clinical condition was appreciated by 84.5% and 74.3% of the family members which ranked 32nd and 96th, respectively. Willingness of ICU staff to answer their questions satisfied 82.5% of the family members, 85.5% of the respondents valued the easy explanation provided to them, and 79.4% respected the consistency of the information, corresponding to 87th, 74th, and 66th rank, respectively. Support, complete involvement, and control over care of their family member while making critical decision was felt by 93.0%, 77.4%, and 76.4% of respondents which ranked 59th, 76th, and 71st, respectively.

Conclusion: Most family members were satisfied with the care provided to them and their critically ill relative in the ICU. The overall satisfaction in care domain ranked 73rd. Completeness of the information provided by the ICU staff ranked at 83 while satisfaction in decision-making domain was ranked 72nd. Efforts towards achieving higher family satisfaction by providing family members with regular updates with a multidisciplinary team approach, adequate time information during decision making and participation in patient care may be way ahead for Humanizing ICUs.

Reference

216. Shorter Course of Remdesivir in Moderate COVID-19 is as Efficacious as Compared to Standard Regime: Observational Study (Conference Abstract ID: ABS0216)
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DOI: 10.5005/jp-journals-10071-23712A.216

Aims and objectives: Remdesivir is an RNA polymerase inhibitor with potent antiviral activity in vitro. It is the current recommended antiviral treatment in moderate to severe COVID-19. However, data on shorter durations of treatment and the adverse effects are limited. Studies have not shown a significant difference between a 5-day course and 10-day course of the remdesivir in severe COVID-19. We evaluated the efficacy of the shorter durations of 3 days vs 5 days on time to recovery and adverse reactions in a patient with moderate COVID-19. Materials and methods: This retrospective study was conducted between April 15 and March 30, 2021, at a tertiary care centre. Patients with moderate COVID-19 (SPO2 <94%) were included. Results: In total 56 patients were included and began treatment. The median duration of the treatment was 3 days for 30 patients and 5 days for 26 patients. The time recovery in 3-day course and 5-day course was 8 days and 9 days. After adjustment for baseline clinical status, patients treated for 3 days and 5 days were similar. The most common adverse event nausea and altered liver enzymes were less in 3 days course (6% vs 8%). Conclusion: In patients with moderate COVID-19, our study did not show a significant difference between 3-day course and 5-day course of remdesivir and adverse effects were less in 3 days course.

216-a. Efficacy and Doses of Ulinastatin in Treatment of COVID-19: A Single Centre Study (Conference Abstract ID: ABS0216-a)
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DOI: 10.5005/jp-journals-10071-23712A.216-a

Aim and objective: Ulinastatin is a glycoprotein extracted from the fresh human urine. It inhibits the activity of various proteolytic enzymes. Patient with severe COVID-19 exhibit elevated serum levels of proinflammatory cytokines IL-6, tumour necrosis factor, IL-1 beta, characterised as cytokine storm, which is believed to progress, deteriorate, and death. Ulinastatin dampens inflammatory response. However, data on efficacy and the doses are limited. We evaluated the efficacy and doses of ulinastatin on in hospital all-cause mortality in patients with moderate to severe COVID-19.

Materials and methods: This retrospective study was conducted between April 1st and June 30, 2021, at tertiary care centre. Patients with moderate to severe COVID-19 (moderate SPO2 <94%, severe SPO2 <90%) were included. This is the first study comparing the doses in COVID-19. Results: In total 145 patients, 75 patients with moderate to severe COVID-19 were treated with ulinastatin + other standard treatment. 70 patients were treated only with a standard treatment regime. All-course mortality was significantly lower in patient treatment with ulinastatin (15.3% vs 20.5%). In a total of 75 patients treated with ulinastatin, 40 patients were given 200,000 units BD and 35 patients were given 200,000 units QID. There was not much difference in the all-course mortality (15% vs 13%) between the two doses. No adverse effects were noted.

Conclusion: Our observational data showed a beneficial effect in moderate-severe COVID-19 patients and there was not much difference in beneficial effects with regular doses and higher doses. This is the first observational study comparing the doses and having the highest numbers treated with ulinastatin.

216-b. Fine Tuning of Simple Things During Pandemic Improves Quality, Criticality, and Outcomes (Conference Abstract ID: ABS0216-b)
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DOI: 10.5005/jp-journals-10071-23712A.216-b

COVID pandemic has made the health care system difficult to prepare for demanding situations. Second wave of the pandemic made many hospitals unable to handle the relentless inflow of patients whilst also running short of beds, oxygen cylinders, health care workers, and other essentials, with limited resources, we had two challenges to secure better supplies and judiciously use the resources. The aim of the study was to use judiciously the resources, fine tune the patient care, reduce the work load/burden of HCW and improve the outcomes to see whether these fine tuning will sustain better care and improve the outcomes.
This observation is done at tertiary care centre. The innovation or fine-tuning were done as follows, 1. **Oxygen Boy**: The O2 is life-saving in COVID-19 and its a long game. The neglect of O2 systems have been partly market failure, partly lack of knowledge and anticipation, and misuse Robust O2 systems that would support the pandemic take time to put in place, so conducting training programmes in short period for HCW regarding using or misusing O2 can be done in the relatively short times if there is good planning and management. We selected an HCW as O2 boy; his job was only checking O2 delivery and monitoring SPO2. He was given SPO2 targets to maintain. He would adjust the O2 depending on the targets, we found care was better, reduced O2 misuse, and less burden on HCW including hospital authorities. He also used to monitor continuous prone positions. 2. **Foleys Catheters and Diapers**: Due to the shortage of ICU/HDU beds during the peak of pandemic, moderate to severe patients were managed in wards with close monitoring. In the initial stages, we faced problems in patients on high o2 when they were mobilized to restrooms. Continuous o2 awake prone was disturbed and derecruited, and had severe hypoxia with symptoms and few near codes. So we started catheterizing the patients on high o2 requirements/elderly, and diapers used if very hypoxic. After these changes the surprises were less, compliance for care was more, and complaints from the patients were very less. 3. **Family Visit**: Allowing family person visit with precautions was very useful. Family visits made patients comfortable, more compliant with the care, families were happy and reduced the significant burden of HCW’s and brought transparency of the care. Complaints of misusing of the drugs were less. 4. **Simple Protocols**: Due to scarcity of HCW and over working, we analyzed the work flow and found more time was taken for documenting and following the reports than actual patient care. So we simplified the charts with only two sheets, one for the doctor one for the staff. These simple changes made work easy and more efficient and also help in collecting data. 5. **Drug Boy**: Drugs indenting and on-time delivery was challenging with limited staff and a high workload. We selected a person only for drug delivery and later with drugs becoming precious and anticipating problems, drug boy used to deliver in family presence. This reduced the further burden of HCW’s. 6. **Continuous Monitoring by a Leader**: COVID is a dynamic process and requires continuous monitoring, timely interventions. Leaders have to take complete charge continuously from admission to discharge. Fragmented care by multiple people worsens the situation. 7. **Support from the Other Specialities**: With above mentioned fine tuning, we found rounds by any specialists doctors was comfortable, less time-consuming, and could manage many patients. This reduces the burden of intensivists and physicians. 8. **Monitored Hydration**: Most patients were hydrated in view of reduced appetite, drug-induced, third spacing, and on NIV. This simple regime significantly reduced acute kidney injuries. 9. **DVT Stockings**: COVID is a prothrombotic state for the prevention of clots all moderate to severe patients were applied DVT stockings, this prevented DVT significantly. 10. **Anxiolytics, Restricted Mobilization, and Spirometry**: Mild anxiolytics reduce the stress, work of breathing, and good compliance to the NIV. Strict restriction in mobilizing and no spirometry in moderate to severe COVID in early stages. Conclusion: COVID pandemic is very challenging, till data no proper pharmacological treatment available. So fine tuning of the resources available will have multiple benefits and also improve outcomes. With these innovations, quality improves, cost-effective, and can easily be replicable in any centre.

216-c. “Rising to the Occasion” The Only Mantra for Success in the COVID-19 Pandemic (Conference Abstract ID: ABS0216-c)

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DOI: 10.5005/jp-journals-10071-23712A.216-c

**Introduction**: The COVID-19 pandemic has been resulted in >2 million deaths globally. SARS COVID 2 is highly infectious and although most are either asymptomatic or mild to moderate, a substantial proportion face the severe life-threatening disease. The mortality risk with large population outbreaks has a major effect on lives, economies, and health care system across the world. The second wave of COVID-19 in India has had severe consequences in the form of increasing cases reduced supplies of the essential treatment and increased deaths, particularly in the young population. It was clearly misgovernance harming people more than lack of medical knowledge. Aim of the studies is to show how rising to the occasion by working together, prioritization, and the right level of resources utilization made things work smoothly with improved quality/outcomes. **Background**: COVID is a dynamic process. No ideal plan or model exists. We cannot wait for the non-medical people or government to fix the problem, due to a lot of limitations. In our centre, we went on the extra mile for the benefits of patients including accommodating more ward/ICU patients, prioritization of experienced staff, and right level of resource utilization which helped to treat more patients with good outcome. **Working together**: 1. Infrastructure: Due to surge in the cases in need of beds with supporting equipment became the primary need. Due to the lockdown and demand, organizing these things was a challenge. Restrictions in place, workload pressures, limitations for regular meetings, things don’t fall in place without hospital authority involvement. There are many smart ways of increasing beds in pandemic. From 20 ICU beds to 50 in short time was done without much civil work and cost. Most patients require a good basic care with supportive measures and time for healing, so we added extra beds. With single O2 port, attaching extensions, we were able to provide for more patients. With this expansion, the second challenge was O2 supply. We had 2 challenges one is better supplies and the other reduced the wastage. COVID-19 is a long game and best time to start implementing effective O2 systems. For better supplies, within short period oxygen generators were installed understanding a few limitations in O2 delivery with generator, we mixed with industrial O2 in lesser percentage. O2 misuse was significantly reduced with identifying O2 boys who works were to monitor O2 and saturation round the clock. This happened in short time with good training, and planning. 2. Second important thing was personnel: Getting trained staff on time practically was not possible. Most trained staff have a notice period to serve. With few trained staff, making them leaders, were supported by junior staff in each shift. This system works well in pandemic, as there are minimal interventions by the staff, Charts were simplified. Responsibility of Ventilator/O2/Drugs was taken off from the staff. They had time for monitoring and troubleshooting. Interestingly, we also found less stress and anxiety among HCW with these models. We should have a few people who take complete charge of the situation. In pandemic only managing critical patients at a later stage doesn’t improve outcomes, precious time will be lost if we delay early interventions.
Third important thing is involving family; we involved families with precautions and consent. The results were very encouraging, and multiple benefits were seen. Fourth important thing is simple protocol and documentation. We made only two sheets for a couple of days with clear trends documented, it reduced the workload, time and improved the care. Fifth part is innovations. The learning experience was doing the basics right with supportive care and innovations if needed. Innovations play a big role in pandemics. Doing basics right and do not harm concept in mind, innovations can be done in clinical/non-clinical areas which can improve the outcomes. **Conclusion:** Working together, prioritising the staff and right level of resources usage helps in better management and outcomes. Innovations play a major role in a pandemic.

**219. Outcome Study on Use of Higher Dose Steroids in COVID-19 Patients in a Tertiary Care Centre (Conference Abstract ID: ABS0219)**

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**Aims and objectives:** The current pandemic due to SARS-CoV-2 has no effective drug regimen to curb the disease. Although the RECOVERY trial showed the mortality benefit of dexamethasone, the difference in worldwide mortality was low. It is unclear if recovery from complications of COVID-19 is due to dexamethasone or it belonging to class of steroids. Methylprednisolone has higher lung penetration than dexamethasone and thus proposed to be more efficacious. Also, it was used in treating the previous SARS outbreak. However, the effectiveness and dosing of methylprednisolone have not been established in the current pandemic. Without established dosing, there is rampant and unregulated use of steroids in our country. Hence, our aim was to retrospectively analyse the outcome of patients who received high dose steroids in terms of mortality and need for mechanical ventilation.  

**Materials and methods:** Retrospective analysis of patients admitted with COVID pneumonia to ICU in our multi-speciality tertiary care centre over the past 6 months was done. Details were collected from electronic charting and patient files. As per our institution’s protocol, patients who presented with severe disease and age <60 years received methylprednisolone 2 mg/kg/day. Patients who received steroids other than 6 mg dexamethasone were included in the study. Outcome was measured in terms of mortality and need for mechanical ventilation. We also noted a very heterogeneous pattern of steroids received by the patients who were referred to our centre. Our analysis did not show an improved outcome in patients receiving high dose of corticosteroids. **Conclusion:** Lack of regulation and erroneous use of steroids were observed in COVID patients after the publication of the RECOVERY trial. Many patients encountered complications due to high dose of steroids like hyperglycemia and secondary infections secondary to profound immunosuppression. This study was done to assess if the benefits of using high dose steroids (in terms of mortality and morbidity) outweighed its complications. But there was no clinically significant improvement in outcome when high dose steroids were used.

**221. Traumatic Haemothorax Due to the Right Adrenal Artery in a Known Case of Autosomal Dominant Polycystic Kidney Disease: A Case Report (Conference Abstract ID: ABS0221)**

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DOI: 10.5005/jp-journals-10071-23712A.221

**Introduction:** Haemorrhage is a common complication of thoracic traumatic injuries, the mechanism of injury being either blunt or penetrating. The source of bleeding is mainly from the thoracic structures but rarely is localized to an intra-diaphragmatic structure. Herein, we report a case of successful endovascular treatment of delayed haemothorax with adrenal arterial injury due to blunt thoracic trauma in a 70-year-old gentleman with autosomal dominant polycystic kidney disease (ADPKD). To our knowledge, this is the first reported case of superior adrenal artery injury leading to haemothorax in a patient with ADPKD. **Case report:** A 70-year-old gentleman, known of hypertension and adult polycystic kidney disease (ADPKD) requiring maintenance hemodialysis was admitted to the emergency department with a history of right-sided chest pain, breathlessness, and dizziness for a day. He sustained trivial trauma a month ago to the right chest for which he took analgesics. On arrival to the emergency room, he had significant cardiorespiratory compromise requiring fluid resuscitation, mechanical ventilation, and inotropic support. An intercostal drain was placed because of the right massive haemothorax but stabilised with massive blood transfusion. He underwent a contrast-enhanced CT scan of the thorax and abdomen for identification of the source of bleeding. The imaging revealed a large haemothorax with fractures of 4th to 6th ribs along with an intramuscular hematoma. Subsequently, a digital subtraction angiography (DSA) which showed active extravasation of contrast from the right superior adrenal artery tracking through the diaphragm into the right haemothorax controlled by an embolization. He stabilised with no more requirements of transfusion, gradually weaned off inotropic support, and extubated by the next day. Follow up, chest radiograph showed near-complete resolution of the haemothorax, with the removal of the intercostal drain. He was discharged after 5 days of hospital stay and remained asymptomatic at a month follow-up. **Discussion:** Delayed haemothorax is known to occur following blunt chest trauma between 22 hours post-injury to 30 days. Injury to the inferior phrenic artery or its branch, i.e., the superior adrenal artery leading to haemothorax is extremely rare (<7%). The superior adrenal artery arises from the inferior phrenic artery and has the potential to be involved in diaphragmatic injuries due to its proximity. It has been reported to cause an intraperitoneal hematoma, pericardial tamponade, and haemothorax in a few reported cases. This patient had a massive ADPKD that are known to cause traction to the vasculature. We postulate that trivial trauma lead to traction injury of the superior adrenal artery causing active bleeding initially in the right diaphragmatic musculature which then served as a communicating pathway for the blood to extravasate in the right pleura. We successfully achieved complete haemostasis by trans-catheter arterial embolization of the bleeding vessel.
Conclusion: Traumatic massive haemothorax are generally due to thoracic causes, but like in our case bleeding from the superior adrenal artery is a rare finding and the Pandora’s box must be kept in mind as a potential source. The trans-catheter endovascular procedure is safe and effective for the identification of the bleeder and for performing selective embolization.

222. Role of Pocus in Differentiating Shock in a Tertiary Care Hospital: A Prospective Observational Study (Conference Abstract ID: ABS0222)

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Aim and background: Early recognition and appropriate treatment of shock have been shown to decrease mortality in various studies. We wanted to evaluate RUSH protocol for patients admitted to the hospital with shock. Objective: To evaluate the role of point of care ultrasound (POCUS) in differentiating types of shock in a tertiary care hospital. Materials and methods: A prospective observational study was done between January 2020 and September 2021 at the Citizens specialty hospital, Hyderabad. Patients included were systolic BP <90 mm Hg or MAP <65 mm Hg with age ≥18 years. POCUS examination as per RUSH protocol was performed within 30 mins and repeated at 6 hours after admission to the hospital. All patients were evaluated and treated as per the hospital policy. We collected all the clinical and biochemical parameters from the case sheet after 6 hours of admission (i.e., after 2nd POCUS assessment). All demographic parameters, initial vitals, modalities of oxygen therapy, vasopressor use were monitored. The final diagnoses of shock were confirmed after discussion with admitting specialist and ICU team. The POCUS findings, clinical and biochemical findings were compared with the final diagnoses. Results: A total of 100 patients were enrolled in this study. The baseline mean characteristics were age 60.2 years, males 68%, females 32%, HR-103/minute, MAP-58 mm Hg, Spo2 93%, respiratory rate 26/minute. Of 100 patients, room air, oxygen, NIV, and invasive mechanical ventilation were 39, 31, 9, and 21, respectively. We observed clinical, laboratory and POCUS diagnosis matched with final diagnosis were 88%, 91%, and 85%, respectively. POCUS in distributive, hypovolemic, cardiogenic, and obstructive shock has diagnostic accuracy of 85%, 92.3%, 77%, and 100%, respectively. POCUS has 100% sensitivity in diagnosing cardiogenic and obstructive shock. POCUS has 100% specificity and positive predictive value in distributive and hypovolemic shock. POCUS has the least positive predictive value of 61.9% in cardiogenic shock. Clinical evaluation in distributive, hypovolemic, cardiogenic, and obstructive shock has diagnostic accuracy of 91.7%, 92.3%, 92.3%, and 0%, respectively. Clinical evaluation has 100% sensitivity in diagnosing cardiogenic and hypovolemic shock. Clinical evaluation has 100% specificity and positive predictive value in diagnosing distributive shock, it has the least positive predictive value in diagnosing obstructive shock. Laboratory parameters in distributive, hypovolemic, cardiogenic, and obstructive shock has diagnostic accuracy of 94.5%, 84.6%, 84.6%, and 0%, respectively. Laboratory evaluation has 100% sensitivity in diagnosing cardiogenic shock. Laboratory evaluation has 100% specificity and positive predictive value in diagnosing distributive shock. Laboratory evaluation has the least positive predictive value in diagnosing obstructive shock. Patients were diagnosed more of cardiogenic shock in all the groups possibly due to previous cardiac dysfunction. Limitations: (a) The POCUS findings were not validated by the expert team. (b) All the collected data were not validated by the internal audit team. Conclusion: Based on our study, POCUS will be helpful to differentiate various types of shock. Both POCUS and clinical-based assessment will have increased accuracy in diagnosing types of shock. Early use of POCUS aids in diagnosing and managing the type of shock which is shown to decrease mortality and morbidity.

223. Perioperative Concerns for Patients with Prior SARS-CoV-2 Infection: Our Experience (Conference Abstract ID: ABS0223)

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Methodology and case description: Case 1: A 55-year-old hypertensive male with complaints of chest pain presented to the cardiology department. He underwent angiography to reveal triple vessel disease and was scheduled for coronary artery bypass graft surgery. During preoperative evaluation, patient gave a history of having suffered from mild COVID-19, getting cured with conservative management under home isolation 3 months back. Examination revealed bilateral basal crepitations. Chest X-ray was indicative of fibrosis basal areas of both lungs (right > left) which was confirmed by HRCT chest. Preoperatively
the patient was optimised with anti-fibrotic agent nintedanib and methylprednisolone. He was reviewed after 1 month and had shown significant-resolution radiologically as well as clinically (improved breath holding time, saturation and lung auscultation). Intraoperative course was uneventful and the patient was ventilated with low tidal volume. Postoperatively, the patient was extubated on day 1. Patient experienced difficulty in expectoration which was improved by N-acetyl cysteine administered intravenously and via nebulisation along with active vigorous physiotherapy. Patient was discharged on the 7th postoperative day. Case 2: A 37-year-old female, a known case of severe mitral stenosis, moderate pulmonary hypertension, moderate tricuspid regurgitation was under conservative management with diuretics and beta-blockers and was being planned for mitral valve replacement. The patient had developed COVID-19 infection 1 month back and was treated under home isolation and conservative management. However, the patient presented with an increase in exercise intolerance post COVID infection. Suspecting the possibility of fluid overload/heart failure and pulmonary hypertension, the diuretic dose was increased post admission, but to no avail. Chest X-ray and HRCT chest were done which highlighted the possibility of allergic bronchopulmonary aspergillosis; which has been described as one of the rare findings coexisting with active COVID-19 infection. This was confirmed by the serum IgE levels and presence of eosinophilia in the complete blood picture. The patient was initiated on itraconazole and methylprednisolone which resulted in improved breathlessness over the next 3 weeks. The patient was subsequently posted for surgical replacement of the mitral valve. Intra-operative and post-operative course was uneventful and the patient was discharged on 5th post-operative day. **Conclusion:** These 2 cases who had suffered from mild COVID-19 infection presented significant challenges for safe intra- and post-operative conduct of anaesthesia. These challenges were overcome by efficient prehaulation and optimisation of the patient and optimal post-operative critical care. Intra-operative course is often just a small segment of the overall hospital course of the patient and the role of critical care in the pre-surgical, extra-hospital care along with post-operative care needs acknowledgement and recognition.

224. Clinical Profile and Outcomes in ICU Patients Requiring Dialysis in a Tertiary Care Teaching Hospital: A Prospective Observational Study (Conference Abstract ID: ABS0224)

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DOI: 10.5005/jp-journals-10071-23712A.224

**Aim and background:** Renal replacement therapy (RRT) has become one of the most essential tools in intensive care units (ICU) not only for treating patients with renal failure but also for its use in other critical diseases like cardiac failure, shock, neurological diseases, hepatic failure, etc. Data on clinical profile, outcomes in patients who undergo dialysis for renal failure in ICUs particularly was available sparsely. **Objectives:** To study the clinical profile, outcomes, prognostic scores utility in ICU patients requiring RRT. To study the indications, different modalities, complications of RRT. **Materials and methods:** A prospective observational study was conducted between the period from October 2020 to October 2021 in the population with age >18 years, who required RRT in ICU of Bharati hospital, a tertiary care teaching hospital, Pune. Data were collected and recorded in a predesigned proforma. All the patients were followed till either death or hospital discharge. Data were analysed using SPSS version 22.0, Inc. Chicago. **Results:** Among the patients admitted to our ICU, a total of 111 patients were included in the study meeting inclusion and exclusion criteria. Mean age was 50.94 ± 16.58 (males – 52.75 ± 16.12, females 44.38 ± 16.90). Males outnumbered the females by 3.62. The commonest etiology being acute on chronic kidney disease followed by infections (sepsis). Shortness of breath was the most common presenting symptom followed by reduced urine output, pedal edema, fever, vomiting, altered sensorium, and others. Hypertension and diabetes remained the most common comorbidities in our study. Oligo-anuria followed by fluid overload took over the other indications for RRT. Out of 332 dialysis sessions, 235 were hemodialysis and 97 were sustained low efficiency dialysis (SLED). Hypoglycemia followed by hypotension were the first and second most common complications in both types of RRT. The average APACHE II and SOFA score was higher in non-survivors [APACHE II 25.87 ± 5.34, SOFA 10.08 ± 3.23] compared to survivors [APACHE II 19.71 ± 4.90, SOFA 5.48 ± 1.94] with a statistical significance of p < 0.001. Area under the curve (AUC) for APACHE II (0.804) was lower compared to SOFA (0.9). **Conclusion:** In our study, acute on chronic kidney disease stood first among the causes of renal failure for RRT. Indications for RRT in descending order being oligo-anuria, fluid overload, uraemia, acidosis, etc. Hypoglycemia was most common complication during dialysis. Both APACHE II and SOFA scores are good for prognosticating renal failure patients in ICU but SOFA showed better discrimination than APACHE II by having more AUC.


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**Aim and background:** Infection due to SARS-CoV-2 may lead to an atypical ARDS, requiring in the most severe cases VV ECMO. The management of persistent severe hypoxemia under VV ECMO requires a multistep clinical approach including prone positioning which could improve oxygenation. **Objective:** To assess the synergistic effect of prone ventilation and VV-ECMO in addition to lung-protective ventilation to improve patient outcomes in severe ARDS. **Materials and methods:** Fortis hospital has an established ECMO center prior to the COVID-19 pandemic but has now become a primary referral center for ECMO retrieval of critically ill patients. In the past 10 months, we had 19 ECMO patients. All patients who underwent ECMO insertion had CT imaging done on the day of ECMO insertion. Patients with inhomogeneous lung opacities on imaging were postulated to potentially benefit from proning on ECMO. We would like to present a case series of 3 patients (2 retrievals and 1 in-house) subjected to prone ventilation immediately after initiation of VV ECMO in view of ARDS with refractory hypoxia, high driving pressures, and Murray score of >3. Femoro-jugular configuration of VV ECMO was used.
with adequate anticoagulation. All patients were subjected to proning and supining with a dedicated team of 8–10 members including a senior intensivist and airway expert at the head end and perfusionist taking care of the ECMO circuit along with 6 support staff on side of the patient and 1–2 staff for placing/removing the head support, chest, and pelvic bolsters. All patients received immunomodulation with methylprednisolone for the persistent maladaptive hyperinflammatory states. Ventilatory parameters on conventional lung-protective ventilation were compared to parameters on ECMO at the initiation of proning and after completion of prone sessions. Any complications associated with proning were noted. **Results:** We describe 3 patients with severe COVID-19 bronchopneumonia with refractory hypoxemia who received prone ventilation on VV ECMO. The median age of patients was 40 years with 1 male and 2 female patients. The median time from symptom onset to mechanical ventilation was 7 days and from mechanical ventilation to VV ECMO initiation was 1.5 days. The median duration on VV-ECMO was 5 days with a duration of prone sessions lasting 18 hours. The mean driving pressure has increased by 63.2% and 260%, respectively, prone sessions lasting 18 hours. Any complications associated with prone were noted.

**Materials and methods:**

**Aim and objectives:** The aim of our study was to describe the efficacy of prone ventilation in COVID-19 patients with refractory hypoxemia. The objectives were to compare ventilatory parameters on conventional lung-protective ventilation and prone ventilation. The main outcome measures were the improvement in oxygenation and survival. The patients were divided into two groups: Group A and Group B.

**Conclusions:** Our study suggests that prone ventilation is an effective treatment option for patients with refractory hypoxemia due to COVID-19. It improves oxygenation and survival rates, reducing the need for mechanical ventilation and improving functional capacity to perform activities of daily living.

**References:**


**Conclusion:** The use of prone ventilation in COVID-19 patients with refractory hypoxemia is associated with improved oxygenation and survival rates. It is a promising therapeutic option that deserves further investigation.
charting and patient files. The data on the usage of non-invasive ventilation using NIV and HFNC as the initial mode of ventilation for hypoxic respiratory failure in these patient groups were analysed. And the findings were compared. The outcome benefit in terms of subsequent invasive ventilation need, mortality, and duration of ICU stay were measured. **Results and conclusion:** Usage of non-invasive ventilation using HFNC as the initial mode for hypoxic respiratory failure has increased in this COVID pandemic compared with other methods of non-invasive ventilation using NIV. The P/F ratio at which escalation of respiratory support was considered in NIV group was higher when compared to HFNC patients. The duration of HFNC usage was found to be longer in COVID patients by accepting lower P/F ratios. We found that HFNC usage was beneficial in preventing invasive ventilation to a larger extent compared to NIV use in COVID-19 patients. No medical staff got a nosocomial infection during this study.

229. **Correlation between Chest CT Severity Scores and Clinical Parameters in Patients with COVID-19 Pneumonia: A Comparative Study between 1st and 2nd Wave** (Conference Abstract ID: ABS0229)

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**Aim and objective:** To correlate a chest CT score in COVID-19 pneumonia with clinical severity and inflammatory biomarkers and overall patient’s outcome. **Materials and methods:** In this retrospective single-center analysis, we collected data of 200 patients admitted to Fortis hospital during the peaks of the two waves of the COVID-19 pandemic. Data for 1st wave were collected between July and September 2020 (100 patients) and 2nd wave from March to April 2021 (100 patients). We collected clinical and laboratory data for analysis, derived from the electronic medical record system for the above durations. Only symptomatic patients within 10 days of onset of symptoms who had CT imaging done at admission were included in the study. A team of experienced radiologists analysed the images to determine the CT severity score based on the extent of lobar involvement. Each lung lobe was visually scored from 0–5, 0–no involvement, 1: <5% involvement, 2: 5–25% involvement; 3: 26–50% involvement; 4: 51–75% involvement; 5: >75% involvement. The total CT score was the sum of individual lobar scores ranging from 0 (no involvement) to 25 (maximum involvement). The results of the chest HRCT images were collected and evaluated using the picture archiving and communication systems (PACS). Patient’s chest CT score, P/F ratio, O2 requirement, and need for ventilatory support and mortality were compared. Descriptive statistics of patients demographics, clinical, and laboratory results were reported as numbers and relative frequencies. Frequencies of CT scores were calculated and compared with other clinical variables. The Pearson correlation coefficient test was used for correlations, considering p < 0.05 statistically significant. **Results:** Our study highlights the clinical implication of initial CT findings as a prognostic indicator in patients with COVID-19. In terms of demographic distribution median age was 57.5 and 58 years, respectively, and both the waves had a median male predominance of 65%. Wave 1 had more patients with lower CT scores and higher P/F ratio, whereas wave 2 had a significant lower P/F ratio for the same CT scores as compared to wave 1, especially at higher CT scores. CT score of >18/25 is associated with increased probability of ventilatory requirement and hence increased mortality in both the waves which was found to be statistically significant with p = 0.005. Also, higher CT scores were found to be positively correlated with lymphopenia, increased serum CRP, d-dimer, and ferritin levels. **Conclusion:** Chest CT imaging has played an important role in monitoring disease progression and predicting prognosis during the COVID-19 pandemic. They can be pivotal in assisting clinicians in diagnosing the severity, predicting the outcomes and most of all, in the management plan for the concerned patient. In our analysis of one of the largest single-centre studies conducted during the two waves of the COVID-19 pandemic in India, CT severity score was directly proportional with inflammatory lab markers, length of hospital stays, and oxygen requirement in patients with COVID-19 infection. CT Chest score of >18/25 on admission is associated with poor prognosis and increased mortality.

230. **To Study the Efficacy of Cerebrospinal Fluid Lactate Levels in Diagnosing Meningitis in Critically Ill Patients** (Conference Abstract ID: ABS0230)

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**Aim and objective:** Accuracy of cerebrospinal fluid (CSF) lactate to diagnose meningitis in critically ill patients is still under evaluation as most of the studies so far have been done on post neurosurgical and brain trauma patients. We aimed to study the efficacy of CSF lactate levels in diagnosing meningitis in critically ill patients. **Materials and methods:** We conducted a prospective, observational study in 71 patients admitted with suspected meningitis in our medical intensive care units (ICUs). Along with other tests, CSF lactate levels were measured for all these patients. Primary outcome measure was correlation of CSF lactate levels with clinical diagnosis of meningitis and secondary outcome measure was correlation of CSF lactate levels with CSF cultures and meningoencephalitis PCRBased panel. Patients were divided into two groups normal lactate and raised lactate groups (>2.1 mmol/L) based on CSF lactate levels and these groups were compared in terms of patient parameters, ICU course, and outcomes. **Results:** Basic characteristics, history, and physical examination were comparable in both the groups (p value > 0.05). Length of hospital stay, length of ICU stay, need for any surgical intervention, and ICU mortality were also comparable but need for invasive mechanical ventilation was more in patients with raised CSF lactate. CSF lactates were significantly higher in patients with meningitis as compared to non-meningitis (2.72 mmol/L and p < 0.001). Sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and accuracy of CSF lactate for diagnosing meningitis were 82.6%, 72.9%, 59.4%, 89.7%, and 76.1%, respectively. There was a significant correlation of CSF lactate with CSF WBC, and CSF culture and meningoencephalitis panel (p value < 0.05). CSF lactate levels were 8.85 ± 4.66 mmol/L in patients with bacterial meningitis and 4.15 ± 3.84 mmol/L in patients with non-bacterial meningitis (p value < 0.05). **Conclusion:** CSF lactate may be used as an add-on marker to aid in our clinical
diagnosis of meningitis in critically ill patients. High CSF lactates may also help us to differentiate between bacterial and non-bacterial meningitis. **Keywords:** Meningitis, CSF lactate level, intensive care unit, meningoencephalitis PCR based panel

231. Comparison of the Efficacy of Tocilizumab and Itolizumab for the Treatment of Severe Covid-19: A Retrospective Cohort Study (Conference Abstract ID: ABS0231)

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**Aim and background:** Tocilizumab is a humanized monoclonal inhibitor of the proinflammatory cytokine interleukin-6 (IL-6) and is licensed for use in the clinical management of cytokine release syndrome in COVID-19. Itolizumab is an anti-CD6 monoclonal antibody initially developed for various cancers, but this drug is now being repurposed for COVID-19. Tocilizumab by inhibiting CD6 downregulates the synthesis of proinflammatory cytokines and adhesion molecules that eventually leads to reduced IFN-γ, IL-6, and TNF-α along with reduced T-cell infiltration at the inflammatory sites. **Objective:** This current retrospective study was undertaken to compare the efficacy and safety of itolizumab and tocilizumab in the treatment of cytokine release syndrome in patients with severe acute respiratory distress syndrome (ARDS) due to COVID-19. **Materials and methods:** This retrospective cohort study was designed to analyze the data collected during the routine care of patients. All patients admitted to the ICU over a period of 3 months were included in the study, and the data were collected from the patient’s medical records. The primary outcome was clinical improvement defined as an improvement of 2 points on an ordinal scale of the clinical condition of the patient. Secondary outcomes were time to clinical improvement, improvement in PO2/FiO2 ratio, duration of the requirement for supplemental oxygen/non-invasive ventilation/invasive ventilation, and mortality. Kaplan–Meier method and log-rank p value were used to compare time-to-discharge alive from ICU in those treated with tocilizumab versus those treated with itolizumab. **Results:** 104 severe COVID-19 patients were included in the study. Total patients in the itolizumab study group were 18 out of which 7 patients died (38.8%) and 11 patients were included in the study. Total patients in the tocilizumab versus those treated with tocilizumab. **Conclusion:** Both tocilizumab and itolizumab were found similar in their efficacy in the treatment of severe COVID-19. Tocilizumab was found to have a better safety profile as compared to itolizumab. **Keywords:** COVID-19, Tocilizumab, Itolizumab.

232. Air in the Lungs and “Thinner” in the Veins: A Bloody Blue Saga (Conference Abstract ID: ABS0232)

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**Aim and background:** Alcohol intoxication can complicate detection and timely management of poisoning. **Case report:** A 52-year-old male was found unconscious at home following heavy alcohol drinking. He presented in emergency department in the gasping state, with hypoglycemia and un-recordable BP. He had tension pneumothorax which was managed accordingly and put into mechanical ventilation, resuscitated with fluids and dextrose. However, in view of persistent hemodynamic instability needing triple inotropes, refractory hypoxemia with cyanosis on a mechanical ventilator and dark brown colored blood co-oximetry was done which showed severe methemoglobinemia. Patient was treated with intravenous methylene blue which led to a dramatic recovery. The inciting event came out to be the ingestion of paint-thinner liquid under the influence of alcohol. **Conclusion:** We report a case of severe methemoglobinemia due to paint-thinner ingestion. High index of suspicion and timely management with methylene blue can save patients of severe methemoglobinemia.

233. A Prospective Cohort Study on Predictors of Mortality of Delirium in an Intensive Care Unit (Conference Abstract ID: ABS0233)

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**Aim and objectives:** To determine the prevalence and clinical profile of delirium and to detect the baseline parameters associated with mortality in patients with delirium admitted to ICU. **Materials and methods:** We used a prospective study design on a cohort of consecutive ICU admissions of a tertiary care teaching hospital. The Confusion Assessment Method (CAM-ICU) and Richmond Agitation Sedation Scale (RASS) were used to diagnose and motor subtype delirium, respectively. Diagnosis was confirmed by Psychiatrist. Various risk factors and predisposing conditions related to delirium were noted and in-hospital mortality was calculated for patients with delirium compared to control group of 100 patients not having delirium. **Results:** Delirium occurred in 207 (22.11%) of 936 patients admitted to ICU. Hypoactive delirium was most common (44.9%) while mixed subtype was least common (26.1%). Mortality was higher in delirious patients 44 (21.3%) compared to non-delirious patients 5 (5%). The usual predisposing factors were hypertension (49%), diabetes mellitus (45.5%), and alcohol use disorder (14%) p value 0.002. The independent risk factors for mortality in delirium were low GCS (p value 0.001), and high APACHE II score (p value 0.001) and hypoaonic delirium (34.4%). The other predisposing factors were hyponatremia (p value 0.001) and hyperuricemia (p value 0.002). The use of sedatives (p value: 0.001), steroids (p value: 0.001), vasopressors (p value: 0.001), and mechanical ventilation (p value 0.002) were precipitating factors for mortality in delirium. The patients with delirium had longer ICU stay (16.27 ± 12.30 vs 5.78 ± 3.32, p value: <0.001), longer hospital stay (19.72 ± 12.89 vs 8.07 ± 3.44, p value: <0.001). Patients with hypoactive delirium had the highest mortality (34.4%) among the subtypes of delirium. **Conclusion:** The present study suggests delirium is prevalent in ICU settings. Low GCS, high APACHE II score, various biochemical abnormalities, and addiction habits are important risk factors for mortality in delirium. The use of sedatives, steroids, and were precipitating factors for mortality in
delirium. Patient with delirium had longer ICU and hospital stay and increased mortality.


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Aim and background: Due to the resurgence of COVID cases many doctors, medical students, and nurses from varied backgrounds, many a time novice to COVID management are deployed in turn from time to time at different COVID care centers and hospitals across India, before they are properly trained and skilled for effective management of COVID and post COVID syndromes, as the disease is relatively new, leading to non-uniform management and documentation. COVID being a contagious disease with newer symptomatology and ongoing research outputs suggesting new guidelines from time to time, which sometimes are conflicting in nature for novice healthcare workers. For uniform and appropriate management to reduce morbidity and mortality, it mandates a unique and effective solution towards guided and error-free disease management, authentic high volume data capture for future research and to trace patient to post COVID condition in the community outside the hospital, virtual patient counselling cum relative visit, generation of the daily patient bulletin, simultaneous teleround of multiple units, and sharing patient’s data across multiple specialties and investigation areas. Objective: To have all these above-mentioned facilities over one platform, we aim to test run a cloud-based dynamic mobile application based dedicated device, the COVID Device (Covid Operation Vital Information Delivery device) across many hospitals in India simultaneously for COVID and post COVID syndrome management and data retrieval for research. Materials and methods: Two institutes, namely IMS and SUM Hospital and ITER have collaborated to design a cloud-based device having recent COVID guidelines on the management of adult COVID patients. The software has been incorporated into a dedicated handheld device (tablet or android mobile phone), the COVID Device in a dynamic way (when new symptomatology surfaces and new research outcomes on management are published). The important modules pertaining to this COVID Device are Web-based application for Registration Desk and Device-based application for Doctor’s Module/Care-givers Module and Patient’s/Patient’s relative’s module. Results: In a pilot, we have successfully test run the COVID device on virtual patients and 2 actual patients in a secondary level COVID ICU and HDU to examine the different functionality of the cloud-based application, namely error-free and guided patient management without missing any point, daily patient relative’s counselling and virtual patient visiting by relatives, generating daily patient bulletin, simultaneous tele round of multiple units, and sharing patient’s data across multiple specialties and investigation areas and tracing patient to the community after discharge to enquire about post COVID condition and retrieval of data across all module and incorporation of new guideline in a dynamic way and checking the facilities for incorporating other modules namely pediatric module. Conclusion: COVID Device (Adult module) is a very effective tool for COVID and post COVID condition management and research. It has the potential to incorporate other modules namely obstetric, pediatric, and neonatal modules. If used across all hospital of India, it will be a real boost to digital health mission and centralized COVID data management and research in India.


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Aim and background: Coronavirus disease 2019 [SARS-CoV-2] is a serious infectious disease which can cause multiple organ failures especially the lungs. Supportive treatment including invasive and non-invasive oxygen support remains a common therapy. High-flow nasal cannula [HFNC], a non-invasive oxygen support method, has emerged as effective treatment option. Despite its significance in SARS-CoV-2 infection, there is a possible adverse effect of pneumothorax. Many cases of pneumothorax are reported as an initial presentation of COVID-19 infection, but in this report, we present two cases of spontaneous pneumothorax on HFNC in COVID-19 infection. Case 1: A 47-year-old patient, known case of hypertension, got admitted for COVID treatment at our hospital. His PaO2/FiO2 index was 47 on admission and the specific treatment started including non-invasive ventilation. Subsequently, he was put on HFNC to maintain oxygen support. He developed newly-onset cough 4 days prior to pneumothorax. After 13 days on HFNC, patient’s oxygen saturation dropped suddenly. He was intubated in emergency, however, suffered cardiac arrest, a few minutes after intubation. Chest X-ray done later showed left-sided massive pneumothorax. Conclusion: Patients on mechanical ventilation are at risk of developing spontaneous pneumothorax. However, HFNC may also be associated with higher chances of barotrauma than other low-flow oxygen therapies, especially in addition to cough. Rapid deterioration of oxygen in a patient on HFNC should be vigilantly monitored for pneumothorax.
237. A Comparative Clinical Study To Evaluate the Effect between Deep Vein Thrombosis (DVT) Compression Stockings with Anticoagulants versus Anticoagulants Alone to Prevent Thromboembolism in SARS COVID-2 with ARDS in ICU Setting (Conference Abstract ID: AB0237)

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Aim and background: COVID-19 is caused by the severe acute respiratory syndrome coronavirus (SARS-CoV-2). COVID-19 is associated with a prothrombotic state leading to adverse clinical outcomes. We aimed to compare DVT compression stockings with anticoagulants versus anticoagulants alone for the prevention of thromboembolism in severely ill ICU COVID patients. Materials and methods: A retrospective chart review of patients admitted to ICU of a tertiary care hospital in Bangalore to assess the incidence of thrombosis (DVT and/or pulmonary embolism) and requirement of thrombolysis in severely ill COVID-19 patients treated with DVT stockings with anticoagulation versus patients treated with anticoagulants alone. Results: A total of 154 patients were admitted to our ICU with severe COVID-19 symptoms, 54 (35.1%) were females, and 100 (64.9%) were males. 121 patients were treated with DVT stockings with anticoagulation and 33 patients were given anticoagulation alone. 8 patients developed thrombotic events, 6 patients developed DVT alone, and 2 patients developed DVT and pulmonary embolism requiring thrombolysis. Out of 8 patients, 6 patients developing thrombotic events were treated with anticoagulation alone for the prevention of thrombosis. Out of 121 patients who were treated with DVT stocking with anticoagulation, only 2 patients developed DVT and none of them developed pulmonary embolism. Conclusion: In patients, hospitalized in ICU with severe COVID-19, use of DVT compression stockings along with anticoagulants significantly reduced the incidence of thrombotic events (DVT and/or pulmonary embolism) and thus reducing the need for proving eventually decreasing the financial burden.

References

238. Clinico-demographic Profile and Clinical Outcomes of Patients Requiring Ventilator Support in a Tertiary Care Intensive Care Unit of a Rural Teaching Medical College: A Prospective Cohort Study (Conference Abstract ID: ABS0238)

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Aims and objectives: To identify the clinical and demographic characteristics of critically ill patients requiring ventilator support. To establish the differential characteristics of patients requiring conventional mechanical ventilation versus non-invasive ventilation. To establish the in-hospital and 90-day mortality of the cohort of patients. To ascertain the variables predicting the clinical outcomes of patients requiring ventilator support. Materials and methods: This was a single-centre prospective cohort study which was carried out among the inpatients admitted to the intensive care unit of a 920-bedded rural teaching hospital situated in central India. We included all patients aged ≥ 18 years old requiring ventilator support for >24 h during the first 48 h of ICU admission in the ICU’s. In the subgroup of patients requiring NIV, only those that used this modality for at least 6 h/day were included. Apart from all demographic, clinical, biochemical, and ventilatory parameters, we calculated chronic health status by Charleston Co-morbidity Index, The tropical Intensive care score (TropICS), the Simplified Acute Physiology Score 3 (SAPS 3), and the Sequential Organ Failure Assessment (SOFA) score. Results: This study was conducted in a 920-bedded rural teaching hospital situated in India between October 2018 and September 2020. A total of 277 patients were included in the study. The mean age in the study was 53 ± 15.4 years and approximately 70% were males. Two-thirds of study patients were on non-invasive ventilation and the remaining one-third on invasive ventilation. In the present study, the mean duration of hospital stay is 11.8 ± 8.1 days whereas the mean duration of ICU stay is 6.7 days. The mean duration on the ventilator is 6.8 ± 5.9 days. Increased PEEP requirement had odds of 2.4 times (C.I = 1.296–4.55) increase of mortality. Among invasively ventilated study subjects, the increasing odds of mortality were seen with increasing values were for maximum PEEP and negative association was observed for tidal volume, plateau pressure, and PEEP. TropICS score levels were high in the study subjects who were invasively ventilated (5.2 + 2.6) compared to study subjects who were ventilated non-invasively (3.3 + 3.7). SAPS-3 levels are very high in invasively ventilated study subjects (41 + 11.4) as compared to non-invasively ventilated study subjects (33.9 + 12.3). The SOFA scores are also high in the study subjects who were invasively ventilated (4.3 + 2.5) when compared to study subjects who were ventilated non-invasively (2.3 + 1.9). In-hospital mortality was 23.08% (21.15% of patients were on invasive ventilation and 1.92% of patients were on NIV). Total mortality at 90 days was 30% (26.92% of patients were on invasive ventilation and 3.08% of patients were on NIV). Mortality in patients admitted in ICU requiring ventilator support were more in elderly aged >70 years, underweight patients, alcoholics, diabetic, hypertensive, COPD patients, cardiac patients, and CKD patients. There was no much difference in mortality in males and females, also in smokers and non-smokers. Study subjects on invasive type of ventilation the odds of mortality was 26.36 times more than for NIV subjects which is statistically significant with a p value of 0.000 and 95% confidence limits are 8.31–83.61.
239. Persistent Hyperbilirubinemia without any Neurological Deficit in Young Patient: A Case Report (Conference Abstract ID: ABS0239)

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Introduction: Bilirubin is the end product of heme catabolism originating from hemoglobin and other hemoprotein compounds. An increase in bilirubin level in the blood occur due to hemolysis, decreased uptake, decreased metabolism, and release of bilirubin from the liver. In such patients, detailed history, clinical examination, and laboratory examination are important. Herbal and drug toxicity should always be ruled out. These patients need to be evaluated in the intensive care unit with proper monitoring and supervision. Isolated hyperbilirubinemia is a condition in which bilirubin, i.e., either unconjugated or conjugated bilirubin with the normal liver enzyme. Case report: A 22-year-old male, resident of village Bhojpur, Bihar was brought to AIIMS Patna ER with complaints of yellowish discoloration of sclera since 15 days, abdominal pain on and off since 15 days, and had past history of some liver disease (not documented) in 2020. He occasionally consumed alcohol and off since 15 days, and had past history of some liver disease (not documented) in 2020. He occasionally consumed alcohol and not have associated pedal edema, spider nevi, asterixis, blood tarry stool, hematemesis, abdominal distension, rash, fetor hepaticus, altered sensorium, or any focal neurological deficit. No history of recent drug intake. At the time of admission, GCS was E4V5M6 and hypotensive even after fluid challenge, so noradrenaline was started and off since 15 days, and had past history of some liver disease (not documented) in 2020. He occasionally consumed alcohol and off since 15 days, and had past history of some liver disease (not documented) in 2020. He occasionally consumed alcohol and not have associated pedal edema, spider nevi, asterixis, blood tarry stool, hematemesis, abdominal distension, rash, fetor hepaticus, altered sensorium, or any focal neurological deficit. No history of recent drug intake. At the time of admission, GCS was E4V5M6 and hypotensive even after fluid challenge, so noradrenaline was started. Blood pressure was 90/60 mmHg. Body temperature was 38.5°C. BMI hypotensive even after fluid challenge, so noradrenaline was started. Blood pressure was 90/60 mmHg. Body temperature was 38.5°C. BMI was 21.4 kg/m². His hemoglobin was 6.6 which was normalised after blood transfusion. Hepatitis viral panel (hepatitis A, B, C, E viruses) was negative. Procalcitonin – 5.75 which normalised later on and culture reports were sterile. Coagulation profiles were on the higher normal limit. Maximum bilirubin recorded was 32 mg/dL. SGPT/SGOT – initially was 190/70, which became normal in due course of time. Peripheral smear did not show schistocytes and the test for malaria was negative. Gamma-glutamyl transpeptidase enzyme was normal that rules out alcohol-induced hepatitis. King college criteria for non-acetaminophen acute liver disease was found to be 1. Initially, arterial ammonia – 54 but later increased to 229 with West and Evan grade 1. USG abdomen showed altered liver echotexture with bilateral IHBRD with the perihepatic collection and gall bladder was partially contracted, splenomegaly, and mild to moderate ascites. A diagnostic tap was done. Serum ascitic fluid and albumin gradient were high. CECT abdomen triphasic showed hepatomegaly with a few small wedge-shaped splenic infarct with gross ascites with mildly enlarged retroperitoneal lymph nodes. Gastromedicine consultation was taken and the autoimmune cause was ruled out (ANA profile, ASMA, Anti LKM-1 SgIgG – all were within normal limits). Ophthalmology consultation was taken to rule out the Kayser Fisher’s ring. UGIE is planned to rule out any esophageal varies. Discussion: Bilirubin is formed as a product in the metabolism of heme. The majority (80%) derives from the breakdown of hemoglobin from erythrocytes, and the remaining 20% comes from non-hemoglobin proteins (e.g., myoglobin, cytochromes). Acute liver dysfunction is not rare but may be life-threatening. The cause may be congenital, traumatic, infective, inflammatory, autoimmune, drug-induced, idiopathic, etc. Alcohol-induced liver dysfunction is more common in our area. It is not recognised and treated early then there may be rapid deterioration and it may lead to hepatic necrosis, multiple organ failure, and finally death. These patients need to be evaluated in the intensive care unit with proper monitoring and supervision. Isolated hyperbilirubinemia is a condition in which bilirubin, i.e., either unconjugated or conjugated bilirubin with normal liver enzymes. Hereditary disorder when diagnosed in adulthood is always benign and require no specific treatment. Genetic cause should be ruled out. Crigler Najjar II is an autosomal recessive disorder seen in the adult with bilirubin levels may exceed 40 mg/dL during exacerbation with normal other liver enzymes. It is an inborn error metabolism with a partial decrease in UGT1A1 gene that helps in the conjugation of bilirubin that may lead to an increase in unconjugated bilirubin with also increase in conjugated bilirubin. Crigler Najjar type 1 is more dangerous than type 2 because there is a complete absence of UGT1A1 and there is rapid involvement of the central nervous system. In this case, patient was having hyperbilirubinemia >25 mg/dL but he was not having any bilirubin-induced neurological disorder (BIND). Both direct and indirect bilirubin was increased but indirect was 3–4 mg/dL higher than direct bilirubin. After ruling out the causes of hyperbilirubinemia. It is still unexplained exactly what was the cause whether it was due to some unknown drug unknown to the attendant or patient, or alcohol-induced or some inborn error which was overshadowed and suddenly appeared in its favourable circumstances. Liver biopsy and genetic testing were not done due to lack of consent from the attendant it was not performed.

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240. Percutaneous Tracheostomy vs Surgical Tracheostomy: An Observational Cohort Study in Intensive Care Unit at Tertiary Care Center (Conference Abstract ID: AB50240)

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Introduction: Tracheostomy is one of the most frequent surgical procedures carried out in critically ill patients. Bedside tracheostomy
may be especially beneficial for patients who require prolonged mechanical ventilation. Percutaneous bedside tracheostomy (PBT) is one of the most common and safe procedures in intensive care units through the world. PBT can be performed quickly and safely by an ICU team trained and familiar with the procedure (anesthesiologists, intensive care physicians, etc.) and does not require the use of the operating room facilities. PBT was demonstrated to be as safe as the conventional surgical approach in most critically ill patients in many clinical trials. The aim of this study was to compare elective percutaneous dilatational tracheostomy (PDT) and surgical tracheostomy (ST) in adult critically ill patients with regards to major short- and long-term outcomes. **Study design:** An Observational Cohort Study in Intensive Care Unit at Tertiary Care Center. **Study period:** 1st September 2020 to 31st August 2021. **Materials and methods:** All adult consecutive intubated patients who were selected for elective tracheostomy were included in the study. The type of method to be used for tracheostomy was decided by the primary treating physician. Demographic, clinical, per-procedure, and post-procedure data were collected as per proforma. Percutaneous dilatation tracheostomy was performed with blue rhino technique at the bedside by a skilled intensivist and all cases of surgical tracheostomy were performed by trauma surgeon technique in an operating room under general anesthesia. The SPSS software was used for the statistical analysis. Cross-tables were generated and a chi-square test was used for testing of association. The p value < 0.05 was considered statistically significant. Main outcome measures were (1) perioperative and postoperative complication incidence and (2) resource utilization. **Results:** A total of 64 patients were included in our study. 30 patients underwent tracheostomy by surgical technique and the remaining 34 patients by percutaneous technique. 42 were males and 22 were females. The most common complications observed in the PDT group were minor bleeding, hypoxemia, and endotracheal tube puncture, whereas in the ST group, the most frequent complications were minor bleeding and false passage of insertion. The most common indication for tracheostomy was prolonged ventilator requirement. In our study, at least in terms of placement of the tracheostomy tube, the two methods were equivalent in the duration of the procedure and perioperative complication incidence. **Conclusion:** Percutaneous dilatation tracheostomy is a safe, quick, and effective method while the overall complications in both groups were comparable. The main advantage of PDT is the possibility of its performance in ICU, as a bedside procedure, which prevents the risk of transfer to the operating room. However, it is clear that the simplicity and easiness of a technique should not lead to an attitude that every physician is allowed to perform it. PDT must be left in the hands of physicians with enough experience. Since there is some concern that the evaluation of morbidity and outcomes of patients with a tracheostomy has not, at present, been adequately investigated, further multi-center, large-scale trials are needed to achieve a better conclusion.

**Keywords:** Complications, Percutaneous dilatational tracheostomy, Surgical tracheostomy.

241. A Rare Case of Intravenous Immunoglobulin associated Non ST Elevation MI (Conference Abstract ID: ABS0241)  
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**Aim and background:** Guillain–Barré syndrome (GBS) is an acute paralyzing inflammatory peripheral nerve disease. Intravenous immunoglobulin (IVIg) is a treatment in which antibodies from donated blood are injected into a person’s vein. High-dose IV immunoglobulin therapy is used in many immune-mediated hematologic and neurologic diseases. Although an association between IVIg administration and myocardial infarction (MI) has not been yet established in prospective clinical trials, clinical experience suggests that elder individuals or those with ischemic heart disease are potentially at risk for cardiac ischemia with IVIg administration. **Case report:** A 63-year-old diabetic male with the old history of stroke was admitted from Neurology OPD with complaints of vomiting, difficulty in walking and diplopia. Physical examination revealed bilateral medial rectus palsy, left ptosis, left facial weakness, and ataxic gait. MRI brain was normal. NCV showed demyelination and occasional polynuropathy affecting the lower limb more than the upper limb. Albumino cytological dissociation was noted on CSF analysis. Patient was diagnosed as Guillain–Barre syndrome and was started on IVIg therapy at a dose of 2 g/kg over 5 days. Prior to therapy his ECG and echocardiogram were normal. On day 2 of ongoing IVIg therapy patient developed respiratory distress and chest discomfort. Troponin I was found to be elevated. ECG showed new T inversions in leads V3 to V5. Echo showed akinetic posterior, lateral and inferior wall with LVEF of 30–35%. Cardiology reference was done in view of Non-ST Elevation MI (NSTEMI) and patient was loaded with antplatelet drugs and was planned for coronary angiography. Angiography revealed thrombus in the left circumflex artery for which stenting was done. Patient’s serial troponins showed a declining trend but patient developed acute kidney injury and died later. **Discussion:** We have reported here a rare case of NSTEMI after IVIg treatment. IVIg comprises gamma globulins derived from purified pooled plasma of donors, consisting mainly of polyspecific IgG. Its immunomodulatory and anti-inflammatory actions have enabled its effective use in several autoimmune and inflammatory clinical conditions. Mild adverse reactions have been reported in patients after high dose IVIg like headache, flushing, fever, chills, fatigue, nausea, diarrhea, blood pressure changes, and tachycardia. High levels of immunoglobulin G, immune complex formation, and increased platelet aggregation could increase blood viscosity after IVIg infusion. This reduces arterial and capillary blood flow, leading to thrombosis causing myocardial infarction, stroke, pulmonary embolism, etc. An increase in serum viscosity is related to the amount of IVIg infused in a given time period. **Conclusion:** Frank coronary events due to IVIg administration are still considered rare. Adequate hydration and slow infusion of IVIg may reduce this complication. ICU practitioners should be aware of risk of NSTEMI while administering IVIg for Guillain–Barre syndrome patients, especially in old patients with vascular risk factors. Cardiovascular evaluation should be done in all such patients prior to IVIg treatment.

242. Efficacy and Doses of Ulinastatin in Treatment of COVID-19: A Single Centre Study (Conference Abstract ID: ABS0242)  
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Aim and objective: Ulinastatin is a glycoprotein extracted from fresh human urine. It inhibits the activity of various proteolytic enzymes. Patients with severe COVID-19 exhibit elevated serum levels of proinflammatory cytokines IL-6, tumour necrosis factor, IL-1 beta, characterised as cytokine storm, which is believed to progress, leading to deterioration and death. Ulinastatin dampens inflammatory response. However, data on efficacy and the doses are limited. We evaluated the efficacy and doses of ulinastatin in the hospital all-cause mortality in patients with moderate to severe COVID-19. Materials and methods: This retrospective study was conducted between April 1 and June 30, 2021, at a tertiary care centre. COVID-19 was confirmed with RT PCR by nasopharyngeal swab. Patients with moderate to severe COVID-19 (moderate SPO2<94%, severe SPO2<90%) on room air were included. This is the first study comparing the doses of ulinastatin in COVID-19. Results: In total 145 patients, 75 patients with moderate to severe COVID-19 were treated with ulinastatin + other standard treatment. 70 patients were treated only with standard treatment regime. All-course mortality was significantly lower in patients treated with ulinastatin (15.3% vs 20.5%). In a total of 75 patients treated with ulinastatin, 40 patients were given 200,000 units BD and 35 patients were given 200,000 units QID. There was not much difference in the all-cause mortality (15% vs 13%) between the two doses. No adverse effects were noted. Conclusion: Our observational data showed a beneficial effect in moderate-severe COVID-19 patients and there was not much difference in beneficial effects with regular doses 200,000 q12th hourly as compared to higher doses of 200,000 q 6th hourly. This is the first observational study comparing the doses and having highest number of patients treated with ulinastatin.

References
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244. Effect of Probiotics on Whole Gut Microbiome in Patients with Critical Care Illnesses: A Pilot Study (Conference Abstract ID: ABS0244)

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Introduction: Hospital-acquired infections (HAI) are major causes of mortality and morbidity, with reported incidences as high as 78% in critically ill patients. The ventilator-associated pneumonia (VAP) and bloodstream infections (BSI) are major contributors of the HAI. VAP is thought to be secondary to bacterial colonization of the upper digestive tract and aspiration of contaminated secretions into the lower airway. Probiotics are postulated to prevent the colonization of these pathogenic bacteria. In the previous studies, the beneficial effect of probiotics has not been consistently demonstrated and the effect has varied depending on the probiotic strain used and patient population studied. In this prospective observational study, we aimed to investigate the effects of probiotics on gut microbiota and its relation with clinical outcomes in mechanically ventilated patients. Objectives: To study the change in the gut microbiome of critically ill patients at different time points – in patients receiving probiotics and compare with that of patients not receiving probiotics. To compare the rate of hospital-acquired infections (VAP and BSI) in two groups. To ascertain whether certain gut microbiome characteristics are associated with an increased rate of HAI. To compare the incidence of diarrhea in two groups. Materials and methods: In this pilot prospective observational study, consecutive mechanically ventilated patients admitted to medical ICU were screened for eligibility as per pre-decided criteria. 20 patients were recruited in the probiotic group and 10 patients in the control group. The patients in the probiotic group were given six probiotic (VSL#3®: 112.5 billion CFU per capsule) capsules per day in 3 divided doses for 10 days. Three stool samples were collected, one at baseline, others between days 3–5 and days 7–10 from recruitment. DNA extraction was done using the standard THSTI method. The DNA sequencing was done by next-generation sequencing using 16S RNA gene Microbiome Sequencing and analysis using Nanopore Platform. The patients were followed for 30 days from recruitment or till death. The clinical parameters for VAP, BSI, and diarrhea were recorded. Results: The comparison of the gut microbiome was done using alpha diversity (Shannon's index) and relative abundance. The comparative analysis of alpha diversity in 2nd and 3rd samples in probiotic vs control group was not statistically significant (median values at the phylum level, probiotic-2.50, control-2.59; p value 0.79). There was a statistically significant increase in relative abundances of certain pathogenic bacteria in the control group compared to the probiotic group (Acinetobacter, Streptococcus, Stenotrophomonas). There is a statistically significant increase in certain beneficial bacteria in the probiotic group in comparison to the control group (Dorea, Streptomyces, Coprococcus, Lactobacillus), VAP rates (probiotic-58%, control-64%; p value 0.938) and BSI (probiotic 21%, control 27%; 0.95) are comparable between the groups. The incidence of diarrhea was similar between groups (10%, 9%; p value 0.61). The all-cause mortality was seen to be similar between groups (probiotic-58%, control-82%; p value 0.348). Conclusion: Probiotics lead to alteration in gut microbiome characteristics with decrease in certain pathogenic bacteria and increase in commensal bacteria in the probiotic group in comparison to control group as shown in our study. Future studies should focus on appropriate dosages and frequency of probiotics which can lead to improved clinical outcomes.

245. How Do We Treat Refractory Thrombotic Thrombocytopenic Purpura in a Critical Care Setting (Conference Abstract ID: ABS0245)

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246. Can’t Escape, Can’t Intubate: Emergency Cricothyroidotomy in a Case of Life-threatening Angioedema Following Thrombolysis with Tenecteplase (Conference Abstract ID: ABS0246)

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Introduction: Angioedema and anaphylactic reactions are recognized but rare side effects of thrombolytic drugs. Most of the case reports describe mild self-limiting angioedema. We present a case of severe life-threatening angioedema following thrombolysis with tenecteplase in a patient of acute ischemic stroke ultimately needing high-risk emergency cricothyroidotomy for survival.

Case report: A 70-year-old gentleman with known hypertension, coronary artery disease, and COPD, presented at the emergency department with sudden onset dysarthria and deviation of the tongue to the right side (within window period). Urgent CT brain ruled out intracranial haemorrhage and he was thrombolized as per stroke protocol with tenecteplase after proper informed consent. However, after about 30 minutes of thrombolysis he started developing swelling of face, tongue, and shortness of breath for which intravascular pheniramine and hydrocortisone were given and oxygen therapy with face mask was started. He deteriorated rapidly to develop stridor, severe respiratory distress, and hypoxia which didn’t even respond to repeated doses of intramuscular epinephrine and the decision to secure a definitive airway was taken. Direct laryngoscopic intubation (Bougie assisted) and fiberoptic nasal intubation were tried successively but failed and hence I-Gel was applied to maintain oxygenation. Though it was highly risky for any invasive procedure, maintenance of the airway was given a priority and percutaneous cricothyroidotomy was performed. Patient was put on mechanical ventilation through cricothyroidotomy and admitted to ICU. He improved clinically and could be decannulated the very next day and shifted to the ward thereafter.

Discussion: Orolingual angioedema following thrombolytic therapy is uncommon (incidence 1.3–5.1%) and mostly needs only supportive measures. Our patient developed rapidly progressing edema leading to airway obstruction, hypoxia, and ultimately in a "can’t intubate, can oxygenate” situation. Due
to progressive laryngopharyngeal oedema despite epinephrine infusion, the decision to front-of-neck-access was weighed against the high risk of bleeding following tenecteplase therapy. Cricothyroidotomy was preferred over tracheostomy being less invasive and time-consuming though anatomy was difficult. To the best of our knowledge, this is the first case of percutaneous cricothyroidotomy performed in tenecteplase induced severe angioedema. Only a handful of case reports describe successful cricothyroidotomies without major bleeding following alteplase-induced severe angioedema. Later on, video stroboscopy was done by ENT team which revealed left aryepiglottic fold cyst which possibly had contributed to glottic obstruction in wake of angioedema. Conclusion: Clinicians should be aware of life-threatening angioedema and anaphylaxis following tenecteplase therapy though extremely rare and should thereby be prepared beforehand. If indicated, thrombolytic therapy per se does not preclude performing cricothyroidotomy in case of extreme airway emergency.

247. Efficacy of Bedside Ultrasonographic Measurement of Optic Nerve Sheath Diameter in Comparison with Clinical and Radio Imaging-based Diagnosis of Raised Intracranial Pressure in Intensive Care Unit Patients: A Prospective Observational Study (Conference Abstract ID: ABS0247)

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Introduction: USG-guided optic nerve sheath diameter measurement (ONSD) has increased interest to identify patients for raised ICP as it is simple, bedside, and rapid assessment possible, reproducible with minimal inter and interobserver variability. We conducted a prospective observational study in traumatic and non-traumatic patients suspected of raised intracranial pressure clinically and radiologically. Objective: Evaluate the efficacy of bedside ultrasonographic measurement of optic nerve sheath diameter. Find out cut-off value of ONSD. Materials and methods: The adult patients admitted to our ICU during 22 months interval (December 2019 to September 2021) were enrolled for the study. Ultrasonographically ONSD was measured in patients with neurological symptoms but CT/MRI findings were not suggestive of raised ICP taken as control and other groups of patients with neurological symptoms and CT/MRI suggestive of raised ICP. Individuals in both groups were >18 years of age. ONSD measured 3 mm behind the globe using Sonosite/GE ultrasound machine with 13–6 MHz linear probe. Results: Total of 121 patients were enrolled, 21 patients were included in control and 100 patients with raised ICP. Control data suggested that upper limit of normal for optic nerve sheath diameter in females was 4.6 mm and in males was 4.8 mm. Out of 100 patients, 81 (81%) were males and 19 (19%) were females, out of these 45 (46%) were diagnosed case of intracranial bleed, 35 (35%) were traumatic brain injury, 14 (15%) were infarct, and 4 (4%) were other cases. 68 (68%) had GCS <8, 18 (18%) had GCS 9–12, 14 (14%) had GCS 13–15. Mean raised ONSD value was 6.25 mm. For detection of raised intracranial pressure, pooled sensitivity was 100%, pooled specificity was 100%. The area under the summary receiver operating characteristic was 1. Sensitivity + specificity of both eyes maximizes at 4.8 mm (p value < 0.0001) therefore we suggest cut-off value of ONSD is 4.8 mm to diagnose raised ICP. Out of 100 patients, 12 patients were brain dead, the maximum raised ONSD in brain dead patients was 7.4 mm and the minimum ONSD was 6.5 mm. And mean ONSD found in brain-dead patients is 7.0 mm. Conclusion: In our study, measured raised ONSD showed specificity 100%, sensitivity 100% at cut-off value of ONSD 4.8 mm compared with radiological and clinical findings of raised ICP. Hence, patients with a high risk of transfer to CT/MRI, ONSD can help us to guide raised ICP, so that necessary measured would not be delayed.

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<th>Mean ONSD in males (mm)</th>
<th>Mean ONSD in females (mm)</th>
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<tr>
<td>Control</td>
<td>4.6</td>
<td>4.43</td>
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<tr>
<td>Patients with raised ICP</td>
<td>6.27</td>
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248. Modification of Management Strategies During Sars COVID 2 Pandemic Improved the Quality, Criticality, and Outcomes of In-Patients (Conference Abstract ID: AB50248)

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The second wave of the pandemic exposed many hospitals to their unpreparedness to handle sudden surge patients due to lack of infrastructure to handle the relentless inflow of pts whilst also running short of beds, o2, ventilators, trained HCW’s, PPE, medications, and other essentials. The aim of the study was to use judiciously the available resources, fine-tune the patient care, reduce the workload and burden of HCW’s, optimize pts care, and improve the outcomes. This observation was done at a tertiary care hospital. The following fine-tuning was done: 1. Oxygen: Robust O2 systems that would support the pandemic, would take time to put in place, so conducting training programmers in a short period for HCW regarding optimal usage and avoid misusing or wastage of O2 was done in a relatively short time. We selected an HCW as O2 provider, the only job to check o2 delivery and SPO2 around the clock. 2. Foley Catheters and Diapers: Patients on high O2 requirements when mobilized, O2 delivery to patients were discontinued along with disruption of prone positions and derecruitment of lungs and had severe hypoxia. So we started catherizing the pts on high O2 need. 3. Family Visit: Family visits made pts comfortable, more compliant to the care. And it also reduced the significant burden of HCW’s who had to otherwise communicate multiple times with their relatives via audio or video phone calls. This also brought transparency of the care. 4. Simple Protocols: We simplified the charts with only two sheets, one for the doctor one for the staff. These simple changes made work easy and more efficient and also help in collecting data. 5. “DRUG” Boy: Drugs indenting and on-time delivery were challenging. We selected a person only for drug delivery and later with drugs becoming precious and anticipating problems, drug boy used to deliver medications to the patient in presence of family. 6. Continuous Monitoring by a Leader: COVID is a dynamic process and requires continuous monitoring, timely interventions. Leaders have to take complete charge continuously from admission to discharge. Fragmented care by multiple people worsens the situations. 7. DVT Stockings: COVID is a prothrombotic state for
8. Anxiolytics, Restricted Mobilization, and Spirometry: Mild anxiolytics reduced the stress, work of breathing, and good compliance to the NIV. Strict restriction in mobilizing and adequate spirometry was supervised in moderate to severe COVID patients in the early stages to help in early recovery from COVID-19.

Conclusion: COVID pandemic is very challenging. Conservative management and fine-tuning of the resources available will have multiple benefits and also improve outcomes. With these innovations, quality will improved was cost-effective and easily replicable in any hospital.

249. Drug Utilisation Study On, Glycopyrronium Based Bronchodilator Combination in Acute Exacerbating Obstructive Airway Diseases Patients in ICU (Conference Abstract ID: ABS0249)

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Objectives of study: To evaluate the safety, efficacy, and outcome of LAMA (long-acting muscarinic agonists) combination in AEOAD (acute exacerbation of obstructive airways diseases) patients admitted to ICU. Bronchodilator therapy plays an essential role in hospitalized AEOAD patients. Traditionally, a combination of SABA (short-acting beta-2 agonist)/LABA (long-acting beta-2 agonist)/SAMA (short-acting muscarinic agonist)/ICS (inhaled corticosteroid) is practised. There is a scarcity of studies on the effect of LAMA in combination with other groups. Among LAMA glycopyrronium has more potent, quicker, and long-lasting action compared to SAMA (ipratropium/tiotropium) also it has better cardiac safety leading to its off-label use for AEOAD in the clinical setting.

Materials and methods: Retrospective study, on 100 consecutive hospitalized AEOAD patients who received glycopyrronium based triple nebulization in ICU. Medical records from October 2020 to February 2021. Data related to demography, severity of AECOPD, pattern of bronchodilator combination, ICU, and hospital length of stay. Drug safety was assessed with adverse reactions if any. Efficacy and outcome were evaluated, in terms of, mortality, duration of treatment, ICU, and hospital length of stay. Statistical analysis was done with SPSS version 1.0.0.1406. Results: Our study included 100 patients, average age of 64.5 years, male to female ratio 4:1. Among comorbidities, 67% of people had comorbidities, DM 49% cardiovascular issues 42%, hypertension in 29%. Out of all patients, 56.5% were COPD, 33.8% asthma rest 9.7% was due to overlap syndrome. Presenting complaints like dyspepsia 90%, cough 69%, fever 47%, pneumonia was the most common reason for admission. Prior medication 27% on ICS + LABA, 27% SABA + SAMA, 35% no prior bronchodilator therapy. We detected a 45% of patients needed respiratory support, NIV 40% mechanical ventilation in 18%, and ECMO none. Average duration of hospitalization was 6 days, ICU LOS 3.4 days. Adverse reaction was not noticed in any of the cases.

250. Efficacy of I-Gel as Adjunct for Tracheal Extubation: A Randomized Controlled Trial (Conference Abstract ID: ABS0250)

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Aims and objectives: Exchanging tracheal tube with laryngeal mask airway before emergence from anaesthesia is one of the methods employed for attenuation of pressor response at extubation. We decided to compare the placement of I gel before endotracheal extubation versus conventional endotracheal extubation in ASA I patients scheduled for elective surgeries under general anaesthesia. Material and methods: 120 adult patients were randomly allocated to two groups of 60 each; Group I, extubation was performed using standard technique and Group II, I gel was inserted before endotracheal extubation. Parameters measured were heart rate (HR), systolic, diastolic and mean blood pressure (MBP), electrocardiogram, oxygen saturation, and end-tidal carbon dioxide. Two-tailed paired Student’s t-test was used for comparison between the two study groups. The value of p < 0.05 was considered as statistically significant. Results: The patient characteristics, demographic data, and surgical procedures were comparable in the two groups. A statistically significant decrease was observed in HR, SBP, DBP, and MAP in Group II as compared to Group I. Conclusion: I gel insertion after tracheal extubation is an effective method for attenuation of hemodynamic response to extubation.

251. Intra-tracheal Tumour Resection: Always a Challenge (Conference Abstract ID: ABS0251)

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DOI: 10.5005/jp-journals-10071-23712A.251

Introduction: Airway shared with surgeon and subjected to surgical manipulation, carries the risk of complete airway obstruction with anaesthesia. “Cannot intubate cannot oxygenate” situation needs to be avoided. Case: A 45-year-old female, no other comorbidity, H/O hemoptysis, progressive dyspnea which aggravated on lying down. Bronchoscopy- mass in tracheal lumen arising from posterior wall of trachea. CT Scan: enhancing polypoidal mass size 11.8*14.3 mm in trachea, 9 cm distal to vocal cords, 80% occlusion. Management: Premedication with glycopyrrolate, Xylometazoline nasal drops, Topical anaesthesia- nebulization with lignocaine. Sedation with midazolam and fentanyl. I gel inserted – connected to 10% oxygen. Bronchoscopy through I gel. Under fiberoptic guidance MLS tube placed distal to growth but proximal to carina and I gel removed. Cuff inflated. Anaesthesia maintained with propofol infusion and fentanyl infusion. Low tracheotomy done – zero degree 4 mm rigid endoscope inserted. Tumor ablation done. Hemostasis achieved and tracheotomy site closed. Trachea...
252. The Role of Vitamin D3 Levels in Covid-19 Disease Severity: Participant or Non-participant (Conference Abstract ID: ABS0252)

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Background: Hospitalised COVID-19 patients are known to exhibit varying degrees of immune dysfunction, few modifiable risk factors have been identified to improve this state of which one is the immune modulator effects of vitamin D. Vitamin D is being prescribed as a treatment of COVID-19 in a few guidelines as there is generalised assumption that vitamin D enhances immunity during this illness. So this is an attempt to find out whether a deficiency of vitamin D is associated with the severity of COVID-19.


Materials and methods: The present case-control study compared serum 25(OH)D levels among Mild to moderate and severe COVID-19 patients. Around 39 diagnosed and Hospitalised Severe COVID-19 disease are compared with 39 Hospitalised Mild and Moderate COVID-19 disease in Care Hospital, Bhubaneswar, Odisha, India between April 1, 2021, and August 31, 2021. Patients were divided into 2 groups. The Group 1 – Mild to Moderate infection with CT Severity index < 10/25 and Group 2 – Severe Infection with HRCT Chest of CTSI >10/25. As per hospital policy, severe infection patients were kept in Critical Care Area and Mild infection patients were kept in Ward/Cabin areas. Any patients becoming sick and being transferred to critical areas are shifted from Group 1 to Group 2 after HRCT chest. Vitamin D levels (25 D Cholecalciferol) are done on the day of admission by chemiluminescence immunoassay test after taking due consent from the patients/attenders. The level of cut-off used in our study is 20 ng/mL. The association was analysed using regression analysis and other statistical methods. Results: The status of 25(OH)D deficiency (present/absent with cut-off being 20 ng/mL) showed no significant difference amongst cases and control at p < 0.05. Chi-square statistics with Yates correction is 1.8909. The p value is 0.169099. So there were no significant differences in vitamin D3 levels between Mild to moderate and Severe COVID-19 patients. Conclusion: 25(OH)D levels appear to have no strong association with disease severity amongst hospitalised COVID-19 patients. Hence, its prescription for COVID-19 treatment as well as prevention needs to be reconsidered.

253. Clinical Presentation of Melioidosis: A Case Series (Conference Abstract ID: ABS0253)

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Introduction: Melioidosis is an infectious disease caused by Gram-negative bacterium Burkholderia pseudomallei. It is a potentially fatal disease endemic to tropical and subtropical regions. Bacteria spread by contact with contaminated water and soil. The presentation of this disease is variable ranging from localized infection to fulminant septicemia and multi-organ dysfunction. Objective: The purpose of this study is to look into clinical presentation, treatment, and outcomes of confirmed melioidosis cases in a tertiary care hospital.

Materials and methods: This is a retrospective case series of patients in a single tertiary care center between January 2018 and September 2021. We present a series of 19 cases admitted with a confirmed diagnosis of melioidosis. Three of 19 cases discontinued treatment in between but were included in the analysis. Results: We report 19 cases of melioidosis admitted to our hospital in a span of 3 years (17 males and 2 females). The median age of presentation was 47 years. The disease had varied presentation with lung involvement in 11 cases (57%), solid organ abscesses in 8 cases (42%), osteomyelitis and septic arthritis in 5 (26%), and acute pyelonephritis in 2 cases (10%). Lung involvement was seen as consolidation, septic emboli, and solid nodular lesions. Most common risk factor associated with disseminated disease was diabetes. Diabetes was seen in 17 cases (89.4%). All patients had uncontrolled blood sugars and 2 cases presented in DKA. Other comorbidities seen were systemic hypertension (16%), coronary artery disease (10%), chronic liver disease (10%), post COVID (10%), and SLE (5%). ARDS complicating lung condition was seen in 6 patients (54%) of which 3 patients were managed with NIV and 3 patients required invasive mechanical ventilation. AKI was seen in 11 patients (57.8%) of which 8 patients recovered from AKI and 3 patients required renal replacement therapy. One patient with associated lupus nephritis required long-term hemodialysis. Altered liver function test was seen in 11 patients (57.8%). Bone marrow suppression is common. Three patients had pancytopenia and 10 patients had thrombocytopenia. Hypotension was the most common electrolyte abnormality seen in 7 patients (36.8%). Of the 19 cases admitted three patients did not continue treatment. Median hospital stay for the remaining 16 cases was 16 days. 15 out of 16 cases survived with a survival rate of 93.7% and one mortality (6.2%). Conclusion: Melioidosis is a potentially fatal disease. High index of suspicion is required for diagnosing this condition due to its varied presentation. Early diagnosis and appropriate treatment is the cornerstone in improving the outcome. Though mortality was less than 6%, they have significant morbidity with prolonged ICU and hospital stay leading to increased economic burden.


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Introduction: Patients with pre-existing comorbidities and immunosuppression due to lymphoma and its treatments, are at greater risk for SARS-CoV-2 infection and severe manifestation of COVID-19. Patients treated with anti CD 20 monoclonal antibody such as rituximab for non-Hodgkin-lymphoma, which induces rapid B cell depletion and possibly impacting the clinical course of COVID-19 in terms of prolonged hospital stay and higher mortality. Case
report: Here, we describe a case series of three male patients already COVID RTPCR positive admitted at our institute aged >60 years, all treated with rituximab for non-Hodgkin-lymphoma. All patients had increased inflammatory markers, bilateral ground-glass opacities on chest CT and required intensive care in view of progressive hypoxemia and respiratory distress, treated with broad-spectrum antibiotics, antifungals, corticosteroids, anticoagulants, injection remdesivir, Tab baricitinib, and other supportive treatment. One patient also received IVIG. Initially, all patients required high oxygen support followed by non-invasive ventilation and finally invasive mechanical ventilatory support in view of increased ventilatory need with FiO2 100%. Despite best intensive care, all patients showed progressive deterioration with refractory hypoxemia and refractory hypotension and succumbed. Discussion: All three patients had prolonged COVID RT PCR positive varies from one month to maximum 5 months and showed mortality. High in-hospital mortality related to severe COVID-19 among patients with lymphoma has been reported in several countries. The risk of early death for patients with severe COVID-19 and lymphoma increases with age and relapsed lymphoma disease. Lack of an efficient antibody production caused by B cell depletion might explain the protracted course, moderate symptoms as lack of antibody producing B cell may have prevented activation of the complement system. Conclusion: The incidence, risk factors, and outcome of prolonged forms of COVID-19 for patients with lymphoma are still poorly assessed. Relapsed/refractory lymphoma and recent administration of anti CD20 therapy are risk factors for prolonged in-hospital stay and death for lymphoma patients hospitalized for COVID-19. These findings may contribute to guide the management of lymphoma during the pandemic.

255. A Case of COVID-19 ARDS with Unusual Refractory Hypoxia
(Conference Abstract ID: ABS0255)

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Aim and background: Since the beginning of COVID-19 pandemic, we have come across a large number of ARDS patients with different presentations and clinical manifestations. The usual management is using a lung-protective ventilatory strategy followed by proning to improve oxygenation. Here, we present a case where the usual management failed to improve oxygenation which led us to think of co-existing alternative diagnosis. Case description: A 59-year-old male with a history of cardiovascular disease, presented with cough and breathing difficulty for 10 days and COVID RT PCR was positive. He was started on remdesivir, steroids, anti-coagulants, and other supportive measures but worsened and had to be intubated and mechanically ventilated. Lung-protective ventilation was initiated but the patient remained hypoxic even at 100% FiO2. Chest X-ray and HRCT did not show much severity and the measured lung compliance was also good. A transesophageal ECHO showed good LV function and no significant diastolic dysfunction. 2 sessions of proning were done and yet the oxygenation did not improve. Repeat HRCT + CTPA was done to look for pulmonary embolism but it instead revealed a pulmonary AV malformation. Coiling of the AV malformation was done. Oxygenation then substantially improved. Further sessions of proning were done and patient was gradually weaned off. Conclusion: There may be several co-existing causes of ventilation-perfusion mismatch which needs to be looked for. Pulmonary AV malformation, though rare, can cause shunting and hence persistent hypoxia. Keywords: ARDS, AV malformation, COVID-19

257. Incidence, Risk Factor and Outcome of Delirium in Intensive Care Unit (COVID vs Non-COVID ICU): An Observational Study
(Conference Abstract ID: ABS0527)

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Aim and background: Delirium is the disturbance of consciousness characterised by acute onset, rapid fluctuations in mental status, and impaired cognitive functioning. The patient's ability to receive, process, store, and recall information is impaired in delirium. Objective: To study the incidence of delirium in patients in COVID and non-COVID ICU. To also study various risk factors associated with delirium. Materials and methods: After ethical committee approval and written informed consent, this study was carried out over a period of 1 year (August 2020 to July 2021). Each patient meeting the inclusion criteria was evaluated on the RAAS score within 24 hours of admission, then screened for delirium according to CAM-ICU worksheet every 6th hourly after admission in MICU. 50 patients were studied each in COVID and non-COVID ICU. Patients found to have delirium after the first assessment were classified as new cases. Various risk factors were evaluated prospectively. Results: Incidence of delirium in non-COVID ICU was 29%, while in COVID ICU was 37%. Delirium is present in a patient who has risk factors including smoking, higher severity of illness, oversedation, and mechanical ventilation. Antipsychotics can be used for patients who develop delirium. Conclusion: Delirium is a preventable issue in ICU patients that can be managed by preventing the risk factors that will decrease overall length of stay in ICU

258. Audit on Head-of-Bed Elevation in Traumatic Brain Injury Neurotrauma ICU, CMCVellore (Conference Abstract ID: ABS0258)

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Aim and objective: To assess the adherence to proper head positioning in traumatic brain injury patients in the neuro-critical care unit at a tertiary hospital. Materials and methods: One of the key factors affecting the outcome of traumatic brain injury (TBI) is the early management of raised intracranial pressure (ICP). One simple and effective way to reduce ICP is the therapeutic head-of-bed elevation (HBE) which helps to achieve a fine balance between adequate cerebral perfusion and increased cerebral blood volume which will contribute to raised ICP based on the Monroe-Kellie doctrine. In this audit, we included all TBI patients prone to have a raised ICP and those with a raised ICP with the exclusion of patients requiring bed rest, children with height <120 cm, patients in prone and Trendelenburg positions, and patients who were seated.
Patients were observed twice daily for 1 week, in the morning and evening to check the adherence to correct head positioning with adequate backrest angle which was defined as trigus being above the level of the mid axillary line. A digital Protractor was used to measure the angle of head-end elevation and visual observation using a spirit level to note if the trigus was above the mid-axillary line. Following the first cycle of the audit, results were tabulated and discussed with the nursing staff. As an intervention, a checklist to objectively monitor head positioning at hourly intervals, was formulated and implemented in the ICU. Subsequently, we conducted two post-intervention cycles of the audit to check the efficiency of the checklist in reducing the incidence of improper head positioning in TBI patients. **Results:** The first audit cycle, revealed that 40.35% of patients in the study group had improper head positioning and only 59.65% of patient had adequate backrest angle with trigus above the mid-axillary line. It was also observed from the first cycle that 86.96% of the patients had with improper head positioning with a backrest angle <20 degrees. Following the first cycle, it was evident that a significant percentage of patients had improper head positioning and therefore the hourly checklist formulated was introduced in the ICU. The second audit cycle, post-intervention revealed that the percentage of patients with improper head positioning had dropped to 11.27% in comparison to 40.35% in the first audit and 88.73% had adequate backrest angle compared to the 59.65% from pre-intervention cycle. The third cycle of the audit also showed consistent improvement with 92.5% adherence to adequate head-of-bed end (HBE) elevation and only 7.5% revealed an incorrect head positioning. **Conclusion:** There was an increasing trend in adherence to maintaining adequate back rest angle and HBE elevation following the use of the bedside checklist. The sustainability of the improvement was confirmed by the third quality improvement cycle which proved the intervention to be helpful.

**259. Audit To Estimate the Incidence of Air Leak in Non-invasive Ventilation (Conference Abstract ID: ABS0259)**

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**DOI:** 10.5005jp-journals-10071-23712A.259

**Aim and objective:** To determine the incidence of air leak in patients who are on non-invasive ventilation in a COVID ICU at a tertiary hospital. **Materials and methods:** Non-invasive ventilation (NIV) is a mode of providing ventilatory support without using an invasive airway. It has become increasingly popular in managing respiratory failures in recent times. The success of NIV is multifactorial. Among these, using an appropriate interface and ensuring patient co-operation is important as air leak at the interface is a major and a common cause of NIV failure. Through this audit, we aim to look at the incidence of air-leak among patients on NIV and assess if the incidence of air-leak can be reduced via the use of checklist. The audit included patients on non-invasive ventilation and excluded patients on NIV who had air leak from any source other than the interface also patients with facial anomalies were excluded. We monitored patients on NIV in a COVID ICU twice a day for a period of 1 week and recorded the percentage of air leak as calculated by the ventilator (Hamilton G5). For the purpose of this audit, we categorised air leak into mild (10% – <30%), moderate (30% – <50%), and severe (≥50%). Following the first cycle of the audit, we tabulated the data and discussed the results with the respiratory therapist. A checklist was formulated which included hourly observations to ensure adequate mask seal and minimize air leak along with ensuring adequate sedation. Subsequently, we conducted two post-intervention cycles of the audit to check the efficiency of the checklist in reducing air leak in patients on NIV. **Results:** The first cycle of the audit showed that 27.45% of patients had severe air leak and 50.98% of patients had mild to moderate air leak on NIV. In addition, it was noted only 21.57% of patients had correct positioning of the mask with a permissible air leak of <10%. Therefore, we implemented the intervention checklist for the respiratory therapist to ensure minimal air leak and subsequently repeated the audit. Following which the percentage of severe air leak in patients on NIV dropped from 27.45% to 5.09%. The percentage of patients with permissible air leak marginally improved from 21.57% to 27.12%. A third cycle of the audit was done to ensure consistent results following the intervention and it did demonstrate consistent results similar to the second cycle of the audit with a percentage of patients with severe air leak being only 5.88% in comparison to 27.45% in the first cycle. Moreover, the percentage of patients with moderate air leak also dropped to 5.88% in comparison to 24.51% from the first audit and 22.03% from the second audit. **Conclusion:** A simple checklist based on hourly observations helped to improve ventilation in patients on NIV by decreasing the percentage of severe and moderate air leak and the method proved to be sustainable.

**260. A study of NT PRO-BNP and ETCO2 in Patients Presenting with Acute Dyspnea (Conference Abstract ID: ABS0260)**

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**Introduction:** Common diagnoses amongst patients presenting with acute dyspnoea in Emergency Department are Decompensated Heart Failure, Chronic Obstructive Pulmonary Disease, ARDS, and others like pulmonary embolism, etc. Differentiating these is essential for proper management. **Objectives:** 1. To measure NT-PRO-BNP and ETCO2 in patients presenting with dyspnea. 2. To evaluate the levels of NT-PRO-BNP and ETCO2 in patients with Heart Failure, COPD, and ARDS. **Materials and methods:** This is a cross-sectional, observational study in patients admitted to the Medicine ICU with Dyspnoea. A total of 72 hypoxic (COVID Negative) patients requiring ventilatory support were evaluated and further categorized into three groups: 1. Heart failure (n = 44), 2. Pulmonary (COPD-13 and PE-2). 3. Sepsis with ARDS (n = 13). All patients were evaluated clinically and NT-pro-BNP, ETCO2, ABG, Chest X-ray, Lung Ultrasound, 2D Echocardiography, and other basic laboratory testing were carried out. **Results:** The mean NT Pro-BNP and ETCO2 in the study subjects was 9872.69 pg/mL ± 10223.83 and 31.52 ±13.83 mm Hg, respectively. Mean NT pro-BNP value was found to be more in cardiac group (13,835.04 pg/mL + 9868.87, CI 10,834.63 to 16,835.45) as compared to respiratory group (785.92 pg/mL + 1129.16, CI 103.6 to 1468.24) and sepsis with ARDS group (4890.6 pg/mL ± 9583.78, CI 900.81 to 10,682.03). This result was statistically significant with p value < 0.05. The difference between
mean values of NT-pro-BNP in the respiratory and sepsis group was NOT statistically significant (p value > 0.05). Mean ETCO2 value was found to be maximum in respiratory group (49.89 ± 7.26 mm Hg, CI 45.5 to 54.28) followed by the cardiac group (30.88 ± 10.78 mm Hg, CI 27.61 to 34.17) followed by sepsis group (19.46 ± 12.15 mm Hg, CI 12.12 to 26.8) and all three were statistically significant (p value < 0.05). Two patients with pulmonary embolism had mean NT-pro-BNP value of 13,649 pg/mL and mean ETCO2 value of 29 mm Hg. Mean PaCO2 – ETCO2 value was found to be maximum in sepsis group (16.78 ± 6.97 mm Hg, CI 12.57 to 21) followed by the respiratory group (8.15 ± 3.32 mm Hg, CI 6.14 to 10.16) followed by cardiac group (5.55 ± 2.04 mm Hg, CI 4.93 to 6.17). This was found to be statistically significant. The difference between mean values of PaCO2 – ETCO2 in the respiratory and cardiac group was NOT statistically significant. The lung ultrasound comet-tail sign had 93.02% sensitivity, 100% specificity, 90.62% negative predictive value (NPV), 100% positive predictive value (PPV), and 95.83% accuracy for the diagnosis of heart failure. **Conclusion:** High NT-pro-BNP and lower ETCO2 were found in acute HF-related dyspnea as compared to COPD. Mean PaCO2 – ETCO2 value was found significantly higher in patients of ARDS. Hence, NT-pro-BNP, ETCO2, and PaCO2 – ETCO2 can be used together in evaluating patients presenting with acute dyspnea in emergency settings.

261. The Clinical Profile and Outcome of Systemic Lupus Erythematosus Flare Presentation in Patients Presenting to a Tertiary Hospital in North East India: A Case Series (Conference Abstract ID: ABS0261)

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Aim and background: Systemic lupus erythematosus (SLE) is a disease with heterogeneity of symptoms and signs. Diagnosis is made by the patient’s clinical presentation (symptoms, signs, and laboratory results) fulfilling the 1997 American College of Rheumatology (ACR) criteria or the 2012 Systemic Lupus International Collaborating Clinics (SLICC) classification criteria. Flare in SLE are known to occur with certain precipitating factors like fever, medications, environmental factors, and stress condition like pregnancy. Severe flare in SLE is an emergency condition which if not managed and controlled has a high mortality. Objective: To study the clinical presentation, severity, and outcome of patients with SLE flare. Materials and methods: A prospective, hospital based, observational study. All SLE cases admitted to medicine ward or ICU with new complaints and complications between the age group of 12 and 50 years of age diagnosed as SLE as per the SLICC criteria were included as cases from January 2021 to September, 2021. The disease activity flare was calculated by the SELENA SLEDAI FLAIR INDEX (SFI) defined by an increase in the SLEDAI of 4 or more points (mild or moderate flare) or a 12 point increase (severe). Results: From January 2021 till September 2021, we had 20 patients of SLE who had to be admitted in view of increasing severity of the disease. The clinical symptoms of the patients were varied ranging from anasarca (8), cough (5), chest pain (5), dyspnea (4), fever (6), facial rash (4), joint pain (3), oral ulcers (4), headache (3), weakness (5), anuria (2), vomiting (2), abdominal pain (3), hematemesis (1), paresthesia and limb weakness (2). On evaluation, 19 patients had anemia, leucopenia in 7 patients, and thrombocytopenia in 7 patients. Increasing nephrotic to nephritic range proteinuria were seen in 16 patients. Deranged creatinine (>1.5 mg/dL) levels in 7 patients. Serositis in the form pleural effusion was present in 3 patients, pericardial effusion in 2, interstitial lung disease in 1, and pulmonary alveolar hemorrhage in 2. Repeated ANA was strongly positive in all 20 patients, however, dsDNA was strongly positive in only 13 patients. Complement C3 was noted to be low in 8 patients, and C4 was in 7 patients. Death was seen in 5 patients. Conclusion: With the above case series, we can observe increasing severity of the disease and high mortality. SLE flare should be considered life-threatening emergency in the field of rheumatology which needs to be recognized at the earliest where proper optimization of therapy can be carried out.

262. Use of Ultrasound and Serial Fast as a Tool for Removal of Ectopic Chest Tube in Liver (Conference Abstract ID: ABS0262)

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Aim and background: Intercostal chest drainage is indicated in a variety of clinical scenarios, including the management of symptomatic pleural effusion, pleural infection, and pneumothorax. Common complications of chest tube insertion are lung laceration, chest wall bleeding, improper tube positioning, and subcutaneous emphysema. However, a penetrating injury of the upper abdominal organs due to chest tube malposition is rare. We describe here a case of chest tube malposition in the liver and its management. Case Description: A 33-year-old male with a history of road traffic accidents came to the emergency department with injuries in the chest, back, upper, and lower limbs. Investigation revealed # Rt. femur, # 6th rib, # D6 vertebra. Owing to respiratory distress caused by right-sided hemothorax, the resident doctor inserted an intercostal chest tube. Within 10 minutes, 500 mL of venous blood was drained through the chest tube followed by hemodynamic instability. Immediately chest tube was clamped and patient was resuscitated with intravenous fluid. Post-procedural chest radiograph revealed the lower position of the chest tube within the liver shadow. CT abdomen confirmed the diagnosis and the chest tube was found in the liver parenchyma. Another chest tube was then inserted through 5th intercostal space to drain hemothorax. As the patient was hemodynamically stable, it was decided to delay the removal of ectopic ICD, and patient was kept under close monitoring. After 7 days, patient was planned for ICD removal under ultrasound guidance in the operating room with adequate preparation for emergency laparotomy if needed. Chest tube was pulled slowly under ultrasonic guidance taking out 2 cm in one go, and then waiting for 5 minutes for any signs of active hemorrhage. In about 45 minutes, we were able to take out the chest tube without any complication. Serial FAST was done every 15 minutes for 1 hour and then hourly for 6 hours to assess any post-procedural intra-abdominal hemorrhage. The rest of the course
was uneventful. **Discussion:** Hepatic injury secondary to chest tube insertion is very rare, and its management is not standardized. On reviewing literature only five cases have been described in the literature. They have been managed conservatively, by surgery or by embolization. We managed the case conservatively because of the stable hemodynamic situation of the patient and to avoid invasive surgery as possible. Chest tube was pulled slowly under USG guidance and serial FAST was used to detect active bleeding. We suggest that USG can be used as a tool in these conditions and can be helpful in avoiding surgical complications.

**References**


263. Sodium Nitrate Ingestion Leading to Methemoglobinemia (Conference Abstract ID: ABS0263)

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DOI: 10.5005/jp-journals-10071-23712A.263

**Aim and objective:** Sodium nitrate is a widespread substance in the environment and is used in food, fertilizer, and explosive industries. Most clinically significant exposures are accidental. We describe a case of methemoglobinemia associated with intentional sodium nitrate ingestion. **Materials and methods:** An 18-year-old female presented to the emergency department with an alleged history of intentional ingestion of sodium nitrate with complaints of breathlessness and vomiting. On arrival, oxygen saturation was 78% on pulse oximetry and cyanosis unresponsive to 100% oxygen. Blood gas analysis demonstrated a methemoglobin (MetHb) level of 65.7%. The patient received 4 doses of 1 mg/kg methylene blue over 48 hours and improved subsequently leading to uneventful discharge. **Results:** Fatal cases of poisoning with sodium nitrate have been described, mainly due to severe methaemoglobinemia. Levels of MetHb as low as 10–20% can produce cyanosis, and MetHb levels >30% can result in tachycardia, muscle weakness, nausea, and vomiting. Clinically, MetHb levels >55% can lead to coma, and at levels >70%, there is a high risk of death. Sodium nitrate acts as an oxidizing agent causing methemoglobinemia. Reduction of MetHb to hemoglobin occurs via the protective enzymes cytochrome-b5 reductase and nicotinamide adenine dinucleotide phosphate (NADPH) MetHb reductase. Treatment includes methylene blue, which acts as a cofactor for NADPH MetHb reductase. **Conclusion:** Though this poisoning is rare, it is important to diagnose methemoglobinemia and provide prompt treatment.

264. Early Awake Proning in COVID-19 Patients to Reduce Invasive Ventilation: A Prospective Interventional Study (Conference Abstract ID: ABS0264)

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DOI: 10.5005/jp-journals-10071-23712A.264

**Aim:** To prevent endotracheal intubations in the COVID wards with early awake proning, allowing time for lung to recover, and decrease mortality in COVID-19 patients.

**Objectives:**

1. To assess the effect of prone positioning on the requirement for invasive mechanical ventilation.
2. To calculate PaO2/FIO2 before prone position.
3. To measure PaO2/FIO2 after prone position.
4. To assess how much increase in PaO2 during prone.
5. To assess the length of time tolerating prone positioning.

**Materials and methods:** Inclusion criteria:

1. Age >18 years.
2. Patient with confirmed COVID with or without chest X-ray infiltrates.
3. Isolated hypoxic respiratory failure without substantial dyspnea (the “paradoxically well appearing” hypoxic patient). Requiring >2 L of O2 to maintain SpO2 >92%. A reasonable candidate might meet the following criteria:
   - not in multi-organ failure,
   - expectation that patient has a fairly reversible lung injury and may avoid intubation,
   - no hypercapnia or substantial dyspnea,
   - normal mental status, able to communicate distress,
   - no anticipation of difficult airway.
4. Patients who do not wish to be intubated (DNI). The main risk of awake proning is that it could cause excessive delays in intubation. In the DNI patient who is failing other modes of ventilation, there is little to be lost by trialing awake proning. Exclusion criteria: (1) Signs of respiratory fatigue (RR > 40/minute, PaCO2 > 50 mm Hg, pH < 7.30, and obvious accessory respiratory muscle use), (2) immediate need for intubation (PaO2/FiO2 < 50 mm Hg, unable to protect airway or change of mental status), (3) unstable hemodynamic status, and (4) inability to collaborate with prone position with agitation or refusal.

**Type of study:** Prospective Interventional Study. **Study duration:** 3 Months (From 15 March 2020). **Awake Proning Protocol for Covid-19 Patients**
Sample size results
Assumptions (7):
Precision = 10.00%
Prevalence = 14.00%
Population size = infinite
95% Confidence Interval specified limits [4% -- 24%]
(These limits equal prevalence plus or minus precision)
Estimated sample size:
n = 47
95% Binomial Exact Confidence Interval with n = 47
= n * prevalence = 7 observed events:
Formula:
\[ n = \frac{Z^2 \times P \times (1/P)}{e^2} \]
Where:
Z = value from standard normal distribution corresponding to
desired confidence level (Z = 1.96 for 95% CI)
- P is expected true proportion

- e is desired precision (half desired CI width).
Here prevalence is 14%

Reference for prevalence:
Wu Z, McGoogan JM. Characteristics of and important lessons
from the coronavirus disease 2019 (COVID-19) outbreak in China:
summary of a report of 72 314 cases from the Chinese Center for
Disease Control and Prevention. Jama 2020;24

Statistical Analysis:
To check the statistical significance of pre and post proning, we
will use paired t-test or Mann–Whitney test to compare means.
To check normality we will use Shapiro–Wilk test, and to test the
correlation between variables we will use Pearson correlation
coefficient.

Results and Discussion – Awake Proning Study
Follow up of patients
Fig. 1 Trend of mean O2 requirement over 3 days of awake proning
It is observed with awake proning that there was a significant fall in O2 requirement over 3 days. The decrease is statistically significant using a paired sample t-test both in male and female patients. The following tables depict the statistically significant reduction in O2 requirement over 3 days.

Paired Samples Statistics for Male patients (N = 30), 1 male patient shifted to ICU after Day 2.

<table>
<thead>
<tr>
<th>Mean age comparison between male and female patients</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
</tbody>
</table>

$t$ value = −2.045 df = 48 $p$ < 0.05 (Sig.)

The above table and graph show that there are 31 male and 19 female patients in the study with mean age 55.1 years and 61.7 years, respectively.

Table 2: Proning duration comparison between male and female patients

<table>
<thead>
<tr>
<th>Proning duration (hours)</th>
<th><strong>Sex</strong></th>
<th><strong>N</strong></th>
<th><strong>S.D</strong></th>
<th><strong>S.E Mean</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>31</td>
<td>23.6</td>
<td>9.182</td>
<td>1.649</td>
</tr>
<tr>
<td>Female</td>
<td>19</td>
<td>24.6</td>
<td>8.688</td>
<td>1.993</td>
</tr>
</tbody>
</table>

$t$ value = −0.356 df = 48 $p$ > 0.05 (NS).

The table shows that there is a statistically significant difference between proning duration amongst male and female patients using an independent sample t test.
Also, it is observed that the mean O2 requirement is slightly higher in females (Baseline – 7.74 L) as compared to males (Baseline – 6.06 L), however, this difference is not statistically significant when observed using an independent sample t-test (t value = –1.728, df = 48, p > 0.05).

The mean reduction of O2 requirement from baseline to Day 3 post proning amongst male patients is 4.53 L, while in females it is 5.16 L. There is no statistically significant mean reduction of O2 requirement in males and females which was observed using independent sample t-test (t value = –0.675, df = 47, p > 0.05).

SpaO2 increase after awake proning

Overall, a total of 21 patients were followed up until Day 3 post proning and an increase in SpaO2 was observed in these patients. It is seen that the Mean Baseline SpaO2 in these 21 patients was 68.43 ± 2 (14.172) and after 3 days of awake proning it increased to 77.24 ± 2 (17.023). However, this difference is not statistically significant using the paired sample t-test (t value = –1.819, df = 47, p > 0.05).

Conclusion: It can be concluded from the study that 3 out of 50 patients (6.0%) required NIV or intubation after giving awake proning. The SpaO2 increases after awake proning but the increase is not statistically significant. However, the O2 requirement is reduced 4 to 6 times after awake proning and this reduction is statistically very highly significant. Thus, awake proning significantly helps in the reduction of the requirement of O2.

References


265. Study on Epidemiology and Risk Factors of Critical Illness Polyneuropathy in Mixed ICU (Conference Abstract ID: ABS0265)

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Introduction: Neuromuscular complications of critical illness are common and can be severe and persistent, with substantial impairment in physical function and long-term quality of life. Etiology of ICU-acquired weakness is multifactorial. Although numerous clinical, laboratory, and pharmacological variables have been reported as significant risk factors for critical illness polyneuromyopathy (CIPM), there is still no consensus on the aetiology of this condition. Objective: Study done to assess the incidence and prevalence and epidemiology of critical illness polyneuropathy in ICU and to study the risk factors for CIPM and electrophysiological findings in CIPM. Study design: It is a prospective observational study for 1 year duration in mixed ICU in north India. Materials and methods: Critically ill patients admitted in mixed ICU are evaluated and patients which satisfies inclusion criteria are prospectively observed during the whole stay in ICU. Association between neuromuscular involvement and various potential risk factors was evaluated. Assessment: After admission to the ICU, Seven hundred patients (700 patients) are enrolled in this study. Patients are assessed with APACHE II score, SOFA score. All necessary biochemical and laboratory investigations were done. All detailed information regarding the source of sepsis and failure of organs and usage of drugs and renal replacement therapy and nutrition were noted. Duration of stay and ventilator stay in ICU and need of tracheostomy also noted. All relevant details and detailed examination for Medical Research Council Sum Score and need of tracheostomy also noted. All relevant details and detailed examination for Medical Research Council Sum Score criteria and MRC SUM SCORE < 48. Electrophysiological study was performed among 55 patients and their data presented. CIPM was significantly associated with the presence and duration of systemic
inflammatory response syndrome and the severity of multiple, respiratory, central nervous, and cardiovascular organ failures. The median duration of mechanical ventilation was significantly longer in patients with CIPM than in those without (16 vs 4 days, p < 0.001). Independent predictors of CIPM obtainable within the 1st week of critical illness were the admission sequential organ failure assessment score (odds ratio [OR], 1.15; 95% confidence interval [CI]) were noted. Electrophysiological study was done for 36 patients and results noted. Conclusion: The presence and duration of systemic inflammatory response syndrome and the severity of multiple and several organ failures are associated with increased risk of the development of CIPM. High SOFA scores and APACHE II score assessed during admission are independent predictors of the development of CIPM. Bacteremia and renal replacement therapy are very likely risk factors for CIPM. Keywords: SOFA, polyneuropathies, critical illness, risk factors

266. Incidence and Risk Factor for AKI in Cardiovascular Surgery Intensive Care Unit (Conference Abstract ID: ABS0266)
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Aim and background: Incidence of acute kidney injury (AKI) after cardiac surgery in western literature is reported as 30%. The development of AKI is detrimental as it increases the odds ratio of operative mortality by 3–8 times. Prevention, early identification, and management are thus imperative. Objective: Aim of our study was to report the incidence of AKI in our setup and identify risk factors; demographic, biochemical, and hemodynamic. Materials and methods: Prospective observational single-centre study was conducted after approval from Institutional Ethics Committee (reference number NK/S550/MD/686, dated December 11; 2019) and trial registration (CTRI/2020/02/023608; date of registration, February 2, 2020). Patients aged 18–60 years scheduled for elective open-heart surgery from March to December 2020 were recruited a day prior to the surgery. Patients with pre-operative cardiac output <35%, pre-existing chronic kidney disease (CKD), previous cardiac surgery, patients who failed to come off first bypass, and preoperative use of intra-aortic balloon pump (IABP) were excluded. Demographic, clinical, and biochemical values were recorded. Intra-operative mean arterial pressure variability was labelled as TcMVI and calculated by dividing the cumulative magnitude of MAP above and below the predefined target of 65–80 mm Hg by the surgical duration. Patients were followed till death or discharge from the Cardiovascular Surgery Intensive Care Unit. AKI was identified (based on Kidney Disease Improving Global Outcome (KDIGO) criteria) if either of the three criteria was met; (a) increase in SCR ≥1.5 time’s baseline, (b) increase in SCR ≥ 0.3 mg/dL (≥26.5 µmol/L) in 48 hours and (c) urine volume <0.5 mL/kg/h for 6 hours. To quantify the severity of AKI, patients were categorized into stages I, II, and III based on 1.5–1.9 times, 2.0–2.9 times, and 3.0 times baseline increase in serum creatinine values, respectively. Increase in serum creatinine to ≥ 4.0 mg/dL (≥353.6 µmol/L) or initiation of renal replacement therapy categorized the patients in stage III AKI. Results: We assessed 350 patients for enrolment of which 61 were admitted renal replacement therapy categorized the patients in stage III AKI. The median duration of mechanical ventilation was significantly longer in patients with CIPM than in those without (16 vs 4 days, p < 0.001). Independent predictors of CIPM obtainable within the 1st week of critical illness were the admission sequential organ failure assessment score (odds ratio [OR], 1.15; 95% confidence interval [CI]) were noted. Electrophysiological study was done for 36 patients and results noted. Conclusion: The presence and duration of systemic inflammatory response syndrome and the severity of multiple, respiratory, central nervous, and cardiovascular organ failures are associated with increased risk of the development of CIPM. High SOFA scores and APACHE II score assessed during admission are independent predictors of the development of CIPM. Bacteremia and renal replacement therapy are very likely risk factors for CIPM. Keywords: SOFA, polyneuropathies, critical illness, risk factors

267. Incidence And Clinical Factors Associated with the Occurrence of Pneumothorax, Pneumomediastinum, and Subcutaneous Emphysema in Critically Ill Patients with COVID-19 (Conference Abstract ID: ABS0267)
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Aims and objectives: Primary: To identify the incidence and clinical factors associated with the occurrence of pneumothorax and pneumomediastinum in critically ill patients with COVID-19 pneumonia. Secondary: To observe the ventilatory/ respiratory parameters prior to occurrence of pneumothorax and pneumomediastinum. To study the clinical outcomes of patients in these patients. Materials and methods: Study design: Retrospective, observational study. All patients above 18 years of age patients admitted to the COVID ICU, prior to November 2020, diagnosed positive for SARS-CoV-2 by reverse transcriptase polymerase chain reaction (RT-PCR) or positive rapid antigen test AND with pneumothorax, subcutaneous emphysema, or pneumomediastinum detected clinically/radiologically were included. We performed a retrospective review of all cases admitted prior to November 30, 2020. All patients admitted to the ICU during this period with a positive RT PCR test were included. Around 409 cases were screened. CXR and CT scans of the chest were reported by the radiologist. The casefiles, serial X-rays, and computed tomography (CT) chest were scrutinized by the PI/CoPI to identify pneumothorax, pneumomediastinum or subcutaneous emphysema (hereby referred to as the “events”). Once included, clinical details prior to occurrence of event and interventions done, outcomes of patients was collected and analysed. Results: 409 cases were screened and 59 cases were identified to have an event or a combination of events. The incidence of pneumothorax was 8.5%, pneumomediastinum 2.9%, and subcutaneous emphysema 9.2% in our study. The mean age of patients who developed either event was 55.5 years. 55% were males and 44% were females. 83% of patients had at least 1 comorbidity. Mean APACHE 2 scores at time of ICU admission was 22.5. The average duration to occurrence of either event was noted to be 8.8 days post ICU admission and 6.2 days post intubation. 10 patients developed either barotrauma event
while on spontaneous respiration indicating a possible mechanism of pSILI. 83% of the time the event was picked up by chest X-ray. The most common intervention was ICD placement (71% of cases) while 1 pneumothorax was tackled with pigtail insertion. Isolated pneumomediastinum cases were not intervened. The average time to resolution of the event was 6 days post intervention. 2 out of the 60 patients in our study developed a cardiac arrest following a pneumothorax. 40% of the patients had a VAE/VAP at the time of developing any of the events. Using Chi-squared test, presence of a ventilator-associated pneumonia (VAP/VAE) was significantly associated with the occurrence of pneumothorax/subcutaneous emphysema. Logistic regression showed that higher PEEP (>10 cmH2O), higher APACHE2 scores, and higher age (>60 years) were associated with the occurrence of pneumothorax but not the other 2 events. In our subset, patients with higher age and higher SOFA scores at the time of the event had a higher incidence of mortality. Overall mortality in our study cohort was 79.9%. Conclusion: The incidence of pneumothorax was 8.5%, pneumomediastinum 2.9%, and subcutaneous emphysema 9.2% in our study. Presence of a VAP/VAE was associated with occurrence of pneumothorax. Higher age and SOFA scores were associated a higher mortality in our subset of patients.

268. Study on Oxygen Utilization During Covid Age: A Quaternary Care Hospital Experience (Conference Abstract ID: ABS0268)
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Introduction: Oxygen therapy, commonly used clinically, should be administered according to the physician’s prescription; however, accumulating evidence signals some degree of inaccuracy in this perspective. This study aimed to evaluate the current practice of prescription and administration of oxygen therapy. Current practice for oxygen therapy prescription and administration was suboptimal. Nation-wide investigations and remediation of oxygen therapy practice is needed to improve patient care.

Statement of problem: Lack of updated standard treatment guidelines on O2 therapy in wards and ICU’s. Lack of knowledge, skill, and attitude of caregivers on titrating O2 out. Lack of screening/monitoring checklist for bedside use on O2 therapy. Cost of low flow oxygen is not incurred in billing. Objective: To find out the frequency of doctor initiated oxygen therapy. To find the percentage increase in oxygen therapy duration after treatment. Materials and methods: The study was conducted at KIMS hospital. Initially, a GAP analysis of the current situation was done. This was done through observation of case records, and staff interviews. The study sample was the patients who were admitted to the hospital during the month of October 2020 and November 2020 and who required oxygen therapy initiation at admission. It was noted that oxygen wastage was more during this COVID age. As a life-saving therapy, it was many times misused. In order to tackle this issue, the problem was quantified. I looked into the data of who initiated the oxygen therapy on the arrival of the patient. Here, it was found that initially most cases were started by nurses under the supervision of doctors without proper doctor orders. A major flaw that was noted during this process was that the initial target Oxygen value which was to be given utmost importance was skipped. Then after that, the timely titration of Oxygen was also not done properly. Finding out these root causes for oxygen misuse, the measure that was taken was to give training to doctors and nurses regarding the importance of oxygen therapy. The training modules attached. The same study was repeated next month after training the doctors. The oxygen usage was found to be significantly reduced. Moreover, the doctors carefully followed the target oxygen rates for each diseases. A fish bone diagram was constructed to find the root cause, why the oxygen targets were not looks into. Thus the need of training for staffs could be identified. Results and conclusion: Oxygen, if used correctly and as per protocol will yield benefits for the patients as well as for other stakeholders of healthcare industry. Initially before the training needs at KIMS hospital were identified oxygen usage was not need driven. The orders were not fully physician driven and proper tapering of dose once the targets were attained was also not monitored. Once training was given to various sectors of staffs, the importance of oxygen administration and monitoring was made clear to them. The SOP were clearly followed. The baseline data before training showed that all oxygen orders were not physician-driven. But after training 100% doctor-driven target could be achieved. The disease-specific oxygen targets were carefully monitored and attained after the training. Moreover, the total expense incurred by the patients was also reduced because blanket coverage of all patients with oxygen therapy was avoided and it was more of need driven.

269. Real-world Evidence of Efficacy and Safety of levonadifloxacin (Oral and I.V) in Management of Acute Bacterial Skin and Skin Structure Infections (ABSSSI): Findings of a Retrospective, Multi-centre Study (Conference Abstract ID: ABS0269)
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Aim and background: antimicrobial resistance by bacteria poses a substantial threat to the success in the treatment of acute infectious skin and skin structure (ABSSSI) infections. Levonadifloxacin is a novel benzoquinolizine subclass of quinolone which has a broad spectrum of activity, available in both oral and intravenous formulations for the treatment of skin structure infections caused by Gram-positive pathogens including methicillin-resistant S. aureus (MRSA). Significant proportions of skin infections involve MRSA. Despite the urgent need for superior therapeutic options, no new anti-MRSA antibiotic with IV and oral option has been introduced in India over the last 15 years, and during this period, the complexity of treating ABSSSI has increased. Levonadifloxacin has a superior bactericidal action, enhanced activity in acidic pH, intracellular environment, and biofilms by virtue of which it emerges as safe and effective therapy in managing difficult-to-treat MRSA infections. The data presented here is part of a large multicentre, post-marketing, observational study (PIONEER study) conducted in India for the assessment of the safety and efficacy of levonadifloxacin. Patients and methods: This prescription event monitoring study captured
data of 227 patients receiving levonadifloxacin (I.V. and/or oral) in a real-world setting to assess the safety and efficacy in the treatment of ABSSSI. Study outcomes were clinical and microbial success at the end of therapy and safety was assessed based on adverse events reported. Results: 140 patients received IV levonadifloxacin therapy, 76 patients received oral alalevonadifloxacin, and 11 received IV followed by oral therapy. 82% of patients showed clinical improvement in 72–96 hours. The mean duration of therapy was 7.3 days. Out of 227 patients, MRSA isolates were identified in 79 patients. Clinical success rates with oral, IV, and IV followed by oral levonadifloxacin therapy were 98.6%, 97.8%, and 100%, respectively. Overall microbial success rate was 99.2% and only 2 patients reported 2 adverse events. Conclusion: Levonadifloxacin and its ester oral prodruk, alalevonadifloxacin, are the broad-spectrum bencoquinolizine subclass of quinolones having activity against multi-drug-resistant Gram-positive pathogens including MRSA, hVISA, and VRSA, as well as quinolone-resistant strains. The excellent safety and efficacy profile of levonadifloxacin on oral and/or intravenous therapy, makes it a desirable treatment modality for the management of ABSSSI. Levonadifloxacin use in ABSSSI also reduces the length of hospital stay by offering early oral switch-over option. Unique features of levonadifloxacin such as minimal drug–drug interactions, exemption from dosage adjustment in renal and hepatic impaired patients and a broad spectrum of coverage, makes it a suitable agent meeting several unmet clinical needs in contemporary patients. Keywords: ABSSSI, Levonadifloxacin, Alalevonadifloxacin, Clinical success, Microbial success.

270. Association of Sofa Score with Severity of Muscle Wasting in Critically Ill Patients: A Prospective Observational Study (Conference Abstract ID: ABS0270)

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Aim and objective: To assess the muscle wasting in critically ill patients and to find its relation to the severity of illness, defined by SOFA score. Materials and methods: Study was conducted in Multidisciplinary ICU in KIMS HEALTH, Thiruvananthapuram, between April 2020 and December 2021. Inclusion criteria: 1. Patients admitted in the ICU, with an expected length of stay at least 7 days and willing to be included. Exclusion criteria: 1. Age < 18 and > 65. 2. Pregnant patients. 3. Patients with a history of neuromuscular disorders. 4. Bedridden patients. 5. Long-term treatment with corticosteroids. 6. Patients with amputated limbs. 7. Patients admitted with burn injury. 8. Patients referred from other hospital (ICUs. 9. Patients unwilling to be included. Methodology: On day 1 of ICU admission, in supine position, a straight line will be drawn from anterior inferior iliac spine to patella in the right leg and its midpoint will be measured using a caliper and marked with a permanent marker. Measurement will be made at the same point every time. Using a portable ultrasound with a high-frequency linear transducer, the transducer was placed perpendicular to the long axis of the and the transverse view of the anterior thigh will be obtained by the same observer. In B mode thickness of the rectus femoris muscle (measured in centimeters from the internal borders of the rectus femoris muscle to the external border of the same) will be measured. The measurements will be repeated on day 7.

There is significant wasting of rectus femoris at day 7 compared to day 1 of admission and has a positive correlation with severity of illness, indicated by highest SOFA score.

Conclusion: There is significant wasting of rectus femoris at day 7 compared to day 1 of admission and has a positive correlation with severity of illness, indicated by highest SOFA score.

271. Predictors of Mortality in Tropical Fever Patients Requiring Intensive Care Admission in a Tertiary Care Hospital in North India (Conference Abstract ID: ABS0271)

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Introduction: Acute febrile illness (AFI) is a common presentation in health care setting. Some of these AFI are more prevalent in tropical and subtropical regions; and are known as tropical fevers. A significant number of tropical fever patients require intensive care unit (ICU) admission and are associated with high mortality. However, there is no established risk predictor of mortality for tropical fever patients requiring ICU admission. Objectives: To identify the risk factors of mortality in tropical fever patients requiring ICU admission. Materials and methods: This was a prospective observational study; in which tropical fever cases of age >12 years admitted to the ICU of a tertiary care hospital in...
north India were recruited. The exclusion criteria were: refusal to consent, and any pre-existing chronic organ dysfunction. Details of history, physical examination findings, investigations, SOFA, and APACHE II scores were noted for all recruited patients. All the recruited patients were followed up till death or discharge from hospital. The entire study population was divided into two groups based on mortality. Risk factors of mortality were identified based on binary logistic regression analysis. Results: In this prospective study, n = 52 patients were recruited; the median (IQR) age was 28 (21–35) years; and 57.7% of patients were males. Most common diagnosis was dengue (n = 15, 28.8%) followed by Vivax malaria (n = 10, 19.22%) and Scrub typhus (n = 8, 15.4%). The others were Falciparum malaria (n = 2, 3.9%), typhoid (n = 2, 3.9%), and leptospirosis (n = 9, 9.6%). The aetiological diagnosis could not be established in 10 (19.2%) patients. Among the 52 tropical fever patients who required ICU admission, 19 (36.5%) patients died. All the mortality occurred in the ICU, and there was no death after shifting of patients from ICU to ward till hospital discharge. The bivariate analysis showed that statistically significant (p < 0.05) factors associated with mortality were: median duration of fever (p = 0.041), presence of icterus (p = 0.014), SpO2 (%) in room air (p = 0.032), GCS (p = 0.016), SOFA score (p = 0.036), APACHE II score (p = 0.001), number of organ failure (p = 0.027), number of days on vasopressor (p = 0.01), serum albumin level (p < 0.001), S. Bilirubin (p = 0.03), 24 hours serum lactate clearance (p < 0.001), requirement of vasopressors (p = 0.018), days of vasopressors (p = 0.010), and ICU length of stay (p = 0.023). The multivariate logistic regression analysis showed that serum albumin, 24 hours lactate clearance and serum bilirubin were statistically significant predictors of mortality. Limitation: The tropical fever is a syndrome involving a heterogeneous group of patients, and the risk factors of mortality in patients requiring ICU admission may vary in different diseases. Conclusion: Serum albumin level, 24 hours lactate clearance, and serum bilirubin are convenient and useful predictor of mortality of tropical fever patients requiring ICU admission.

References

272. Comparison of Practices of Fluid Resuscitation in Septic Shock Patients with or without Pre-existing Left Ventricular Dysfunction: A Prospective Observational Study (Conference Abstract ID: ABS0272)

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Aim and objective: Septic shock is the most commonly occurring of all types of shock. Patients with septic shock can be clinically identified by a vasopressor requirement to maintain a mean arterial pressure of 65 mm Hg or greater and serum lactate level >2 mmol/L (>18 mg/dL) in the absence of hypovolemia. Patient with septic shock may be associated with concurrent reversible left ventricular dysfunction (LVD). In this study fluid resuscitation in septic shock patients with pre-existing LVD or without LVD are selected for the study. Objective: Primary objective: To assess cumulative fluid given in septic shock patients at the end of resuscitation with and without left ventricular dysfunction at 6, 24, and 72 hours. Secondary objective: To assess the requirement of vasopressors in septic shock patients with and without left ventricular dysfunction at the end of resuscitation at 24 hours.

Materials and methods: Study design: The present study was a single-centre, prospective, observational and non-interventional study. Study duration: Study was conducted from January 2020 to September 2021. Study population/sample size: As it was an observational study so sample size would be adult patients with septic shock with or without left ventricular failure who are undergoing treatment in critical care department in Fortis Escorts Heart Institute, New Delhi during the defined duration of study. Data collection: 1. Patient demographic data. 2. Patient clinical examination findings and severity of illness (based on APACHEII). Results: Adult patients >18 years of age were enrolled in the study. Provisional results are: Cumulative fluid resuscitation done in septic shock patients in both group is almost same during 6 hours. At the end of 24 and 72 hours cumulative fluid given is less in group with left ventricular dysfunction. Vasopressor requirement were slightly higher in left ventricular dysfunction patients at the end of 24 hours. (Final result and conclusion are in processing and will be submitted in paper to be presented till November 2021.)
no seizures/focal neurological deficit/diplopia/ENT bleed/Nausea/Vomiting. Pain, swelling deformity, and restriction of motion of Right lower limb Brought to KGMC- admitted in ortho ward. Brought to KGMC on 22/9/21 admitted in ortho ward–Liston’s Splintage application done. Investigations done planned for surgery. He got admitted in critical care medicine due to respiratory distress and increase requirement of oxygen therapy. Primary survey and secondary survey according to ATLS protocol was done and cause for respiratory distress was ruled out. Patient improved on oxygen therapy. Fat embolism was suspected no other visible cause was identified. Patient got operated for fracture shaft femur. Day 2 post op patient had high grade fever 101 to 105 f. Patient got evaluated for fever all cultures were sent and surgical site was evaluated for Surgical Site infection. Suture site was healthy, no discharge was there. USG lower limb was done to rule out surgical site collection but nothing significant was there. Provisionally all cultures were sterile and empirically antibiotics was added patient didn’t responded to antibiotics. Other infective and non-infective cause for fever with shock was assaulted. Viral panel was sent it was chikungunya IgM Positive and parvo high rising titer in serial samples was positive. Patient got evaluated for cytokine syndrome and HLH and bone marrow biopsy was sent was satisfying the HLH criteria. Patient was started on steroids his fever and shock responded, antibiotics were stopped and patient got discharged.

Keywords: Chikungunya virus, Co-infection, Haemophagocytic lymphohistiocytosis, Parvovirus.

274. Coronavirus-2019 Disease with Pancytopenia with Leptospirosis and Herpes Simplex Virus Co-infection. (Conference Abstract ID: ABS0274)

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Aim and background: COVID-19 pandemic has affected the whole world. Besides COVID, many infections may emerge during the course of the disease. Lymphopenia, use of immunosuppressants underlying comorbidities, and immune dysregulation secondary to SARS-CoV-2 could be the likely cause of the emergence such infections. We hereby describe a case of COVID-19 disease which presented with pancytopenia and was found to have Leptospirosis and Herpes Simplex Virus co-infection. Case summary: A 23-year-old postpartum female with no comorbidities and uneventful obstetric history was referred to our hospital 2 weeks after a full-term normal vaginal delivery. She developed generalized convulsive status epilepticus on the 10th day of her delivery, which was managed elsewhere with anti-epileptic drugs (AEDs). During her hospital stay, RTPCR for COVID-19 turned out to be positive but she remained asymptomatic throughout the course of her illness and seizures remained well-controlled on AEDs.

On admission to our hospital, she was fully conscious, alert with no focal neurological deficits. Notable findings on examination were pancytopenia with megaloblastic features, bilateral pedal edema, and hepatosplenomegaly. NCCT brain was done which was suggestive of subarachnoid hemorrhage (SAH) along bilateral parietooccipital region for which conservative management was planned. 2D echocardiography was normal. Ultrasonography of abdomen revealed gross splenomegaly and mild hepatomegaly with mesenteric lymphadenopathy. NCCT thorax and abdomen were unremarkable apart from hepatosplenomegaly. In the panel sent for pancytopenia workup, IgM anti-HSV 1 antibodies turned out to be positive in blood. In addition, tropical workup was suggestive of Leptospirosis (IgM antibodies were positive). Workup for tuberculosis was negative. Bone marrow workup revealed features of trilineage hematopoiesis with micronormoblastic maturation consistent with iron deficiency anemia with no evidence of hemophagocytosis. Subsequently, IV acyclovir, IV doxycycline, and iron replacement were added. She improved clinically after these therapies and was subsequently discharged in a stable condition. MRI brain with MR angiography and venography done before discharge showed T1 sulcal hyperintensities along bilateral parietooccipital regions suggestive of SAH which was not progressing (as compared to NCCT brain scan done at admission). On day 60 of telephonic follow-up, patient was doing well and leading normal life without any persistence or emergence of symptoms.

Keywords: COVID-19, Herpes virus co-infections, Leptospirosis, Pancytopenia.

275. To Identify Rising Level of CRP and d-Dimer As Predictor of Increased Morbidity and Mortality in Covid-19 Patient. A Retrospective Observational Study. (Conference Abstract ID: ABS0275)

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Aim and background: Cytokine storm caused by the release of proinflammatory mediators, e.g., IL-6, TNF-, IL2, IL10, G-CSF, etc., is the hallmark of COVID-19 disease. This cytokine storm is characterized by immuno-thrombomodulation. C-Reactive Protein (CRP) and d-dimer are markers of proinflammatory state, which can also be used as a prognostic marker for the underlying disease processes. Objective: To determine the clinical utility of raised C-reactive protein (CRP) and d-Dimer levels as prognostic markers in patients with the diagnosis of COVID-19.

Materials and methods: This retrospective observational study will be conducted at Max Super speciality Hospital I.P. Extension, Delhi after ethical committee clearance. Adult (age > 18 years) patients with confirmed diagnosis of COVID-19 admitted to COVID-ICU between 1st April 2021 till 30th June 2021 will be included and checked for CRP and d-Dimer values retrospectively. Correlation between raised CRP and d-dimer on presentation and rising trend of markers with 28-day mortality, Average length of ICU stay, need for invasive mechanical ventilation, and need for Renal Replacement Therapy will be seen.

Results: Results will be shared after the completion of the study.

278. A Rare Case of Fenpropathrin (Pyrethroid) Compound Poisoning Causing Neural and Cardiac Conduction Abnormalities Mimicking Organophosphorus Compound. (Conference Abstract ID: ABS0278)

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Pyrethroid compound is widely used acaricide in agricultural sector. Even though it is less toxic to human, reports of accidental and
suicidal poisoning are not uncommon. Literatures have described neurotoxicity and cardiotoxicity on animals by type 2 pyrethroid, one example of this group is fenpropathrin, but no single human case reports were described in the literature till date. We report a case of suicidal fenpropathrin consumption in a 24-year-old male presented with status epilepticus requiring mechanical ventilation and knockdown therapy. He also developed repeated undulating baseline flutter for 3 days from admission which got spontaneously reverted. Patient had required prolonged ventilator with tracheostomy support and got discharged on day 21. Follow-up study was uneventful. The mechanism of neurotoxicity and cardiotoxicity is believed to be due to alteration in sodium channels of the neurons and heart. 

Keywords: fenpropathrin poisoning, neurotoxicity, pyrethroid poisoning, status epilepticus, sympathetic overactivity, undulating baseline flutter.

279. Multiple Myeloma (Conference Abstract ID: ABS0279)

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Introduction: Multiple myeloma is a clonal proliferation of plasma cells with multiple osteolytic lesions. The median age at diagnosis is 69 years. Males are more commonly affected than females. It constitutes 13% of all the haematological malignancies. In 70% of cases, bone pain is the most common symptom. 25% of patients present with renal failure. Disease is associated with several chromosomal abnormalities. Prognosis in these patients can be assessed by ISS and cytogenetic changes. Case: A 44-year-old male patient with no comorbidities presented with generalized weakness and PR bleed since 2–3 months, chest pain since 1 month, fever, and difficulty in breathing since 3 days. On examination he had pallor, ecchymotic patches over bilateral forearm and a bony mass over left 3rd rib. He had a palpable spleen and on auscultation bilateral infraaxillary and infrascapular crepitations were heard. Per Rectal examination was normal. His investigations had anaemia with thrombocytopenia, Activated Lymphocytes, Rouleaux formation on Peripheral smear. Hypoalbuminaemia and hypercalcaemia. Biopsy from the bony mass showed evidence of mononucleate plasmacytoid cells and Bone marrow Aspiration report was also suggestive of 90–95% plasmacytosis. M band formation on serum protein electrophoresis was seen. Also he had elevated serum light chains and Beta2 Microglobulins. Chest X-ray showed classical punched out lesions. He was diagnosed as a case of Multiple Myeloma. Conclusion: In our case, patient had came with complications of multiple myeloma. The most typical thoracic manifestation of multiple myeloma are bony involvement of the thoracic cage. Though its incidence is common in elderly patients, can also be found among middle aged.

280. Creutzfeldt–Jakob Disease: A Rare Disorder – A Common Malingering (Conference Abstract ID: ABS0280)

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Creutzfeldt–Jakob disease (sCJD) is a human prion, rare neurodegenerative disorder of unknown etiology that causes rapidly progressive dementia. Diagnosing CJD is difficult due to non-specific clinical features and low suspicion. Rapidly progressive dementia accompanied with quick involuntary muscle jerking, visual disturbances, cerebellar and pyramidal extra pyramidal signs are characteristic features. Here we present a 62-year-old male with decreased appetite, appendicular rigidity and symmetrical progressive loss of vision since 1 month. EEG showed signs of 0.5–1.0 Hz periodic sharp wave complexes (PSWC) and MRI showed diffuse cerebral atrophy with ventriculomegaly. Keywords: Creutzfeldt–Jakob disease, Prion, Neurodegenerative disorders, loss of vision, ventriculomegaly.

Introduction: Creutzfeldt–Jakob disease (CJD) also known as “Prion Disease” or “Transmissible Spongiform Encephalopathies” is a degenerative disorder affecting the brain. It is a rare form of disease as it affects one in one million every year worldwide. In India, the incidence is around 0.01 cases per million population. It presents in four forms namely sporadic (85%), familial (10–15%), iatrogenic (<1%). Sporadic form is common in 6th–7th decade of life.4-6 Sporadic form is seen without any known risk factors, hereditary form may have family history of disease, while in acquired form the disease is transmitted through exposure of brain or nervous tissue to certain medical procedures. The typical case of CJD starts with the stage of non-specific symptoms like visual disturbances, psychiatric symptoms, memory disturbances followed by the stage of rapid progressive cognitive impairment, myoclonus and EEG changes. In third and the final stage patient lands up in akinetic mutism state. The disease is heterogeneous due to its varied clinico-pathological phenotypic characteristics and has always posed a challenge to the physicians. Hence, it is important to ascertain the relationship between clinical presentation and pathophysiology of the disease for early diagnosis. The present case study throws light on detailed presentation of the patient and the laboratory findings.

Case study: This case study describes a 62-year-old male presenting with gradual onset binocular, painless loss of vision followed by asymmetric appendicular slowing and associated postural tremors for two months. The patient also reported progressive loss of vision. Thereafter, he complained of anorexia which was significant and he also developed reduced responsiveness to surrounding stimuli 3 days before admission. There was no history of fever, headache, vomiting, and seizures. On developing, visual symptoms, the patient had consulted a few ophthalmologists, but no definitive diagnosis was made and there was a relentless progression of complaints. This was followed by asymmetrical postural tremors on the right side with rigidity of right upper and lower limbs followed, later by rigidity of left upper and lower limbs and left hand postural tremors. These symptoms were non-disabling. Then he consulted a general physician who provisionally diagnosed him as idiopathic Parkinson’s Disease. The patient was referred to neurologist for a definitive diagnosis and to a Psychiatrist as a suspected malingering, further delaying the proper management. Before a definitive diagnosis could be made, patient developed altered sensation along with reduced responsiveness to verbal stimuli. His visual symptoms had already progressed to near total blindness and he was bed bound for 3 days when he visited our facility. On admission, his vital signs were within normal range and blood tests were unremarkable. Neurological assessment revealed generalized rigidity, stuporous sensorium, and stimulus sensitive myoclonus. These were isolated limb myoclonus and were
sensitive to auditory and sensory stimuli. EEG suggested 0.5–1.0 Hz periodic sharp wave discharges over both hemispheres. This characteristic EEG finding with presence of starele myoclonus lead to the provisional diagnosis of prion disease. MRI was done, which revealed diffuse cerebral atrophy with ventriculomegaly. Chest CT and CT angiography suggested right segmental pulmonary embolism. CSF study was normal.

Thrombolysis was done with Heparin iv bolus 80 units per kg followed by 18 units per kg infusion for 5 days. He was started on anti-epileptics valproate and syndopa. He was intubated and later tracheotomised for respiratory support. Patient's rigidity improved with syndopa and stimulus sensitive myoclonus reduced significantly with valproate. However, his sensorium did not show any improvement. This was further complicated by Ventilator-associated Pneumonia (VAP) that he developed after days of his indoor stay. The lung infection resolved after the administration of Colistin. He was weaned from the ventilator support and was discharged after explaining the poor prognosis to the relatives.

Discussion: Creutzfeld–Jacob disease is a transmissible spongiform encephalopathy with a long incubation period and sudden onset of symptoms. The diagnosis if made in early stages can help to improve quality of life of the patient.

In the present case study, the patient’s is 62 years. The 6th to 7th decade is the commonest age group for presentation of disease owing to the long incubation period. Manix et al.6 Pasha et al.2,7 Mehndiratta et al.8 in their case reports which was progressively worsened.9 The patient did not present with the classical symptom of rapidly progressive dementia and confusion reported by other authors.2–6 The classical symptom of rapidly progressive dementia and confusion reported by other authors.2–6 was not present in this patient. Raman et al. have also reported a similar case of 64-year-old woman who presented with tremulous jerky movements of her right upper extremity, right-sided numbness, ataxia, headaches, and joint pain.10 The patient was provisionally diagnosed as suffering from Parkinson’s and was referred to Neurologist and Ophthalmologist where he was labelled normal on clinical examination and investigations and was referred to Psychiatrist with a diagnosis of Malingering. The atypical clinical features and non-conclusive investigations make diagnosis a search for needle in the haystack. Most of the patients are either referred to Ophthalmologist or Psychiatrist owing to the symptoms causing waste of time and agony to the patient and family.9–12 In the present case when a careful and detailed history, thorough clinical examination and correlation of investigations with clinical findings was done the diagnosis was reached.

Conclusion: This case begins with non-specific neurological symptoms like altered sensorium, unresponsiveness and decreased appetite. It progresses to an atypical presentation of declining vision and progressive weakness. The non-specific initial psychiatric symptoms, makes the diagnosis difficult. High level of suspicion and early initial investigations like EEG, MRI and molecular diagnostic techniques forms the mainstay for early identification. There are no specific treatment options and treatment mainly comprises of supportive care.

Recommendation: Earlier diagnosis is facilitated with high level of suspicion and conducting early investigations like EEG and MRI to ensure better management of the cases.

What is different/unique in this case:
The patient did not present with the typical symptoms of memory loss and abnormal behaviour (insomnia, apathetic behaviour etc.) that are frequently observed in CJD.

References:
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