

Postintensive Care Syndrome: The Aftermath

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ABSTRACT

Postintensive care syndrome (PICS) is a frequent but underrecognized entity. It signifies a new or worsening impairment in cognitive, psychiatric, or physical disabilities arising during critical illness and persisting long afterward. The article discusses the data presented in an accompanying original article in a cohort of Indian patients. The multiple domains of disabilities affect the health-related quality of life (HRQoL) for months to years. The editorial introduces the subject providing a brief overview of the current literature. Preventive and treatment strategies involving a multidisciplinary collaboration is necessary for good outcomes.

Keywords: Cognitive dysfunction, Intensive care, Outcomes, Post-traumatic stress disorder, Quality of life.

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The challenge of restoring to health a critically ill patient does not end with his/her ICU and hospital survival and discharge. Picking up the pieces after the storm can be the beginning of a long-drawn process. Postintensive care syndrome (PICS) in adults is a new or worsening impairment of one or more of cognitive, psychiatric, and physical disabilities arising in the setting of critical illness and persisting beyond recovery of the primary illness and discharge.¹ It is no longer limited to a short duration post discharge from an ICU as it may be of a variable period.

The incidence of some component of PICS among those receiving intensive care may occur in the majority of patients.^{2,3} Neurocognitive impairment may occur in almost 35% of patients persisting for months or even years. Psychological disabilities are frequent (up to 62%) in the form of anxiety, depression, or the severe disabilities of post-traumatic stress disorder (PTSD).³

Physical disabilities occur in a significant proportion (>25%), negatively affecting the health-related quality of life (HRQoL). It measurably affects the activities of daily living (ADLs) and instrumental activity of daily living (IADL).² The latter measures the ability to perform useful functions such as performing house work or returning to one's occupation. Critical illness polyneuropathy (CIP), critical illness myopathy (CIM), and critical illness myoneuromyopathy (CIMN) all are frequent.⁴ While myopathy may resolve completely and within a few weeks, others may take months to resolve and leave residual disability. Additionally, the adverse socioeconomic impact and loss of employment have also been reported to affect 33% of families at 6 months and 28% at 1 year.⁵

In this issue of the *Indian Journal of Critical Care Medicine* Rai et al.⁶ have addressed this hitherto unexplored aspect of post-ICU patient outcomes in India. In a relatively small prospective observational cohort study, composite quality-of-life outcomes were measured as Physical Component Summary (PCS) score and Mental Component Summary (MCS) score. The instrument used for assessing HRQoL was the Short Form-36 (SF-36) Health Survey questionnaire with 36 items and 8 functional domains. The SF-36 was assessed by recall of the baseline functional status before the acute illness requiring ICU care and at follow-up at 1 and 6 months post discharge.

Important exclusions were premorbid neurological or psychiatric illness, the terminally ill on end-of-life care and those unresponsive to or lost to follow-up communication, age less than

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18 years and more than 70 years and an ICU stay less than 1 week. The majority of this cohort was of acute illness such as pneumonia, febrile illness, and severe sepsis or septic shock. The mean ICU stay was about 14 days and the mean of days on mechanical ventilation was 8, both together with a mean APACHE II of 19 indicating high severity. Consistent with observations in previous studies, considerable deterioration in PCS and MCS took place 1 month later in comparison with premorbid functional status (28 and 35%, respectively). The PCS score improved significantly at 6 months as compared to that at 1 month but MCS only marginally (21 and 5%, respectively). Notably, even the improved level of PCS fell short of the functional premorbid status. At 6 months, the overall status was significantly impaired as compared to what can be expected in the general population. It is problematic that the latter assessment was done in comparison with European norms as India-specific data were unavailable. This could overestimate the magnitude of the deterioration for the Indian patient. As the authors themselves point out, the premorbid baseline assessment predominantly dependent on recall and reporting by proxies comes with its inherent biases and inaccuracies.

The authors found a higher risk of post-ICU syndrome attributable to the older age group (>50 years) and to disease severity as assessed by APACHE II and SOFA scores. However, they found no association with the duration of mechanical ventilation or ICU stay.

In this study, there is no data on neurocognitive function. Several longitudinal studies have revealed a considerable burden of neurocognitive impairment that is unrecognized because of the inability of patients to communicate or due to the fact that formal testing is rarely done.^{2,7} They are attributed to cortical inflammatory

changes and ICU delirium has been identified as a major risk factor. Cognitive deficits are known to persist a long time-for even up to 5 years.

Awareness of the various disabilities that constitute PICS in a considerable proportion of survivors of critical illness is needed to take appropriate preventive measures during ICU stay and to provide multidisciplinary support at follow-up. This includes control of pain; reduction of the use of benzodiazepines; prevention, early detection and treatment of delirium; early mobilization, improving sleep quality and duration, liberal visitation, and psychological support.⁸ The suffering of the patient spills over to the family caregivers (PIC-family) who may experience anxiety, depression, sleep deprivation, complicated grief, and PTSD.⁹ The risk factors include poor communication by hospital staff, low educational level, inability to get access to or information about their patient, decision-making responsibility, and loss of or having the loved one close to death. Management of the critically ill and the families is moving toward a more holistic care, both during ICU stay and afterward.

REFERENCES

1. Needham DM, Davidson J, Cohen H, Hopkins RO, Weinert C, Wunsch H, et al. Improving long-term outcomes after discharge from intensive care unit: report from a stakeholders' conference. *Crit Care Med* 2012;40(2):502–509. DOI: 10.1097/CCM.0b013e318232da75.
2. Pandharipande PP, Girard TD, Jackson JC, Morandi A, Thompson JL, Pun BT, et al. Long term cognitive impairment after critical illness. *New Engl J Med* 2013;369(14):1306.
3. Jackson JC, Pandharipande PP, Girard TD, Brummel NE, Thompson JL, Hughes CG, et al. Depression, posttraumatic stress disorder, and functional disability in survivors of critical illness: results from the BRAIN ICU (bringing to light the risk factors and incidence of neuropsychological dysfunction in ICU survivors) Investigation: a longitudinal cohort study. *Lancet Respir Med* 2014;2(5):369–379.
4. Vanhorebeek I, Latronico N, Van den Berghe G. ICU-acquired weakness. *Intensive Care Med* 2020;46(4):637–653. DOI: 10.1007/s00134-020-05944-453.
5. Griffiths J, Hatch RA, Bishop J, Morgan K, Jenkinson C, Cuthbertson BH, et al. An exploration of social and economic outcome and associated health-related quality of life after critical illness in general intensive care unit survivors: a 12 month follow up study. *Crit Care* 2013;17(3):R100. DOI: 10.1186/cc12745.
6. Rai R, Singh R, Azim A, Agarwal A, Mishra P, Singh PK. Impact of critical illness on the quality of life after ICU discharge. *Indian J Crit Care Med* 2020;24(5):299–306.
7. Pisani MA, Redlich C, McNicoll L, Ely EW, Inouye SK. Underrecognition of preexisting cognitive impairment by physicians in older ICU patients. *Chest* 2003;124(6):2267–2274. DOI: 10.1378/chest.124.6.2267.
8. Hsieh SJ, Otusanya O, Gershengorn HB, Hope AA, Dayton C, Levi D, et al. Staged implementation of awakening and breathing, coordination, delirium monitoring and management and early mobilization bundle improves patient outcomes and reduces hospital costs. *Crit Care Med* 2019;47(7):885. DOI: 10.1097/CCM.0000000000003765.
9. Davidson JE, Jones C, Bienvenu OJ. Family response to critical illness: postintensive care syndrome-family. *Crit Care Med* 2012;40(2): 618–624. DOI: 10.1097/CCM.0b013e318236ebf9.