Letters to the Editor

Dangers of very low blood pH

Sir,

In the paper “Interpretation of arterial blood gas,” Sood et al. [1] have mentioned in the Section “Introduction”, “Disorders of acid-base balance can create complications in many disease states, and occasionally the abnormality may be so severe as to become a life-threatening risk factor”. However, they did not concretize the life-threatening abnormalities and also the potentially life-saving therapeutic interventions.

For the readers of Indian Journal of Critical Care Medicine, it would be perhaps interesting to know that the most dangerous abnormality is a very low blood pH (=very high concentration of hydrogen ions H+). According to Edge et al. [2], very low blood pH is the immediate cause of coma, regardless of the accompanying anion (acetoacetate, lactic, etc.). The glycolytic enzyme phosphofructokinase is pH dependent, as its activity decreases with decreasing pH, and thus glucose utilization in brain cells is impaired. Therefore, the clinical consequences of decreasing blood pH are drowsiness, stupor, coma, and death in coma.

Also, it is very important to note that by increasing the blood pH from a very low level, the comatose patient can recover to full alertness, e.g. Ahmad and Beckett [5] have reported successful therapy with infusions of sodium bicarbonate in a comatose patient with lactic acidosis and blood pH of 6.389. Also, in comatose patients with diabetic ketoacidosis, there is an increase in blood pH from very low levels due to infusion of alkalizing solutions, which is life saving, e.g. Wagner et al. [6] have reported zero lethality in the time period 1986–1997 with infusions of sodium bicarbonate.

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References

Hot climate and elderly surgical patients

Sir,

We read the paper entitled “Hot climate and perioperative outcome in elderly patient” published by Gautam et al., which was published in the last issue of Indian Journal of Critical Care Medicine,[1] with much interest because of our similar climate in Bandarabbas, southern Iran.

We exactly understand the differences between our elderly population in Bandarabbas and India where the mentioned study was done, but since no study is still available regarding this issue in this area, their results are useful for us.
Authors answered some important questions regarding this issue, but before using their results in clinical practice it would be useful to answer other questions as well. These questions should be answered in future researches.

1. The authors have chosen a cut off value of 30°C in their study. It is not clear whether this cut off value shows the best difference between the group of patients with hot climate and the control group? So further studies are recommended for reaching to an optimum cut off point for hot climate.

2. The results may be different in emergency surgeries. It seems that the difference is more relevant in emergency surgeries, but interventions are more possible in elective surgeries.

3. It seems that people who work in poor conditions are vulnerable to hot climate effects, but it should be noted that working in poor conditions may lead to their adaptation to these situations and they may better tolerate the hot climate.

4. Also another important point is the type and duration of intervention before surgery in these patients and also the need for continuing it during and after surgery.

Future researches may answer these questions.

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