Gastric Tonometry as a Prognostic Index of Mortality in Sepsis

Dear Editor,

This is in reference to the article titled, "Gastric Tonometry as a Prognostic Index of Mortality in Sepsis" authored by Col KK Upadhyay et al, published in the October 2007 issue of MJAFI. I complement the authors on their study but I have the following observations to make:

1. The authors have selected cases based on the presence of two or more clinical manifestations of SIRS (Table 1). This is inaccurate because SIRS can result from infective as well as non-infective causes and the term SIRS is not synonymous with sepsis. Patients are said to have developed sepsis if they have met clinical criteria for SIRS and have evidence of a local or systemic source of infection [1]. In addition, it would have been better if they had specified how many of these patients had severe sepsis and/or septic shock.
2. The method used to distribute patients in the study and control groups has not been mentioned. An arbitrary distribution may have introduced selection bias and led to incorrect results.
3. The authors state that the patients in Group A (control group) were managed traditionally without gastric tonometry while those in Group B (study group) were managed with its help and that gastric tonometry was used to guide therapeutic intervention in the form of IV fluids, inotropes and antibiotics. The authors however, fail to mention as to how specifically the therapy was modified and whether any additional therapeutic intervention was carried out, since IV fluids, inotropes and antibiotics constitute standard supportive treatment for patients of sepsis.
4. The authors state that the patients in Group A (control group) were managed conventionally without gastric tonometry. However, Table 2 contains PgCO_2 and pHi values for patients in this group. It is not understood as to how these values were obtained for the control group if the gastric tonometer catheter was not inserted.

5. The reported mortality in the study of 64% in Group A and 54% in Group B is much in excess of accepted figures of 20-35% in patients with severe sepsis and 40-60% in patients with septic shock [2]. This is despite the authors claim that gastric tonometry was used to guide resuscitation in this study. Besides, it has not been specified whether the improved results reported for Group B are statistically significant or not. Though some human studies, with pHi as an endpoint in resuscitation have shown that normalization of pHi correlates with improved survival [3,4] other studies have not reported any difference in outcome [5]. Hence the utility of pHi as a singular endpoint in the resuscitation of critically ill patients remains controversial.

References

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Reply

Dear Editor,

We appreciate the interest shown by the reader in our article. The reply to the observations made by the reader is as follows:

1. The patients were included in the study only if two or more clinical manifestations of SIRS along with evidence of a local or systemic infection. However this point was not specified in the article due to oversight.
2. Patients were randomly divided into study and control group. There was no selection bias.
3. In Group B patients therapy was modified if low $\text{pHi} < 7.2$ was noticed. The therapy was in the form of additional IV fluids and vasopressors.
4. PgCO_2 and pHi were measured in both groups. However in

Group A the treating physician was kept blind.

5. The reported difference in mortality is highly statistically significant. We agree with the observation of excess mortality. This could be due to other factors such as emerging antibiotic resistance, elderly population and most of the patients were transferred from various hospitals and this probably has resulted in higher mortality. There are many end point of resuscitation such as mixed venous oxygen saturation, arterial blood pH . But in our study we have used pHi as a marker of resuscitation.

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