Invasive Burn Wound Infection

Adhish Basu

Received: 29 October 2009 / Accepted: 14 February 2010 / Published online: 8 May 2011
© Association of Surgeons of India 2011

Dear Editor,

I read the article by Pattanshetti et al. [1] with great interest. The authors randomized 30 consecutive adult patients with burn injury (involving <60% of total body surface area) to receive tube feeds of either glutamine-enriched isonitrogenous diet or non-glutamine-enriched isonitrogenous diet. All patients were admitted to a single institution and received enteral feeds till the wounds healed “completely” or received a skin graft.

The primary outcomes measured were incidence of “wound infection” detected by “wound culture” and incidence of “bacteremia” detected by “blood culture” [1]. The secondary outcomes measured were duration of hospital stay and mortality. The authors found statistically significant reduction in “wound infection” rates and duration of hospital stay but *no* statistically significant reduction in the incidence of “bacteremia” or mortality in patients receiving glutamine supplementation.

The authors conclude that administration of glutamine in their patients prevented translocation of luminal gut bacteria and hence reduced incidence of burn wound infection [1].

I would like the authors and the editors of the Indian Journal of Surgery to clarify certain issues regarding the article.

Firstly, the authors mention that “wound cultures” were performed weekly to diagnose “wound infection” in all

patients [1]. Detection of bacteria on a wound surface swab can confirm bacterial colonization of the wound. It does not diagnose invasive wound infection. A wound biopsy is required to confirm bacterial invasion of sub-eschar viable tissue [2]. This invasive wound infection can lead to bacteremia and sepsis in a burn patient.

Secondly, the authors mention that “*most of the bacteria cultured from the wound were of gut origin. Thus, wound infection in patients with burns is not always due to contamination from hospital environment, it could be due to endogenous bacteria*” [1]. It is a well known fact that translocated gut bacteria can cause bacteremia, sepsis and multi-organ failure in patients with extensive deep dermal and full thickness burns [3]. Translocated bacteria however, do *not* cause invasive burn wound infection. Fecal contamination of burn wounds can logically explain the authors’ findings.

Thirdly, the authors state that “*the depth of burn wound has not got any role in the initial management of patients with burns*” [1]. The management of superficial and deep dermal burns are completely different. The issue of burn wound infection and mortality from sepsis are issues in the management of patients with deep dermal and full thickness burns [4]. These are non-issues in patients with epidermal or superficial dermal burns.

Fourthly, the authors mention that “*The glutamine supplementation or the isonitrogenous mixture was given until the end of the study*” [1]. However, the authors do not mention how many patients tolerated their tube feeds and how many patients needed their tube feeds to be stopped due to ileus. It is important to know if the intended nutritional supplement actually reached the patient’s intestine.

Fifthly, the authors do not mention their source of funding for conducting the study. Nor do they disclose any conflict of interest. However, finding images of commercially available glutamine packets (Glutammune,

Electronic supplementary material The online version of this article (doi:10.1007/s12262-011-0292-8) contains supplementary material, which is available to authorized users.

A. Basu (✉)
Department of Plastic Surgery,
Postgraduate Institute of Medical Education and Research,
Chandigarh, India
e-mail: adhishbasu@rediffmail.com

Claris Lifesciences Limited, Ahmedabad, India) in the article makes one wonder if a conflict of interest actually exists.

Lastly, the results and discussion sections in this article have been amalgamated into one. I would like to appeal to the editor that a standard format for all published articles be maintained.

In conclusion, I would like to add that the peer-reviewers of a submitted article should ask the authors pertinent questions before an article is deemed fit for publication. Accepting the drawbacks of a study does *not* show the author(s) in poor light. On the contrary, it improves the quality of published articles and provides a clear message to the reader. It is probably time that editors of our esteemed journal enforce the principles they espouse [5].

References

1. Pattanshetti VM, Powar RS, Godhi AS, Metgud SC (2009) Enteral glutamine supplementation reducing infectious morbidity in burns patients: a randomised controlled trial. *Indian J Surg* 71:193–197
2. Mitchell V, Galizia JP, Fournier L (1989) Precise diagnosis of infection in burn wound biopsy specimens. Combination of histologic technique, acridine orange staining, and culture. *J Burn Care Rehabil* 10:195–202
3. Wischmeyer PE, Lynch J, Liedel J (2001) Glutamine administration reduces Gram-negative bacteremia in severely burned patients: a prospective, randomized, double-blind trial versus isonitrogenous control. *Crit Care Med* 29:2075–2080
4. Garrel D, Patenaude J, Nedelec B (2003) Decreased mortality and infectious morbidity in adult burn patients given enteral glutamine supplements: a prospective, controlled, randomized clinical trial. *Crit Care Med* 31:2444–2449
5. Shukla S (2009) Responsible writing. *Indian J Surg* 71:175–176