Preanaesthetic H₂ antagonists for acid aspiration pneumonia prophylaxis. Is there evidence of tolerance?

Editor—The editorial by Hirota and Kushikata¹ advocates the use of proton pump inhibitors in intensive care unit patients who have developed tolerance to H₂ antagonists, without discussing the reduced host defences caused by these drugs. Omeprazole impairs production of reactive oxygen intermediates by neutrophils, and diminishes bactericidal activity in healthy human subjects.² An accompanying editorial to this paper highlighted the risk of raising intragastric pH with a drug that diminishes neutrophil function in critically ill patients, as it could lead to an increase in upper gastrointestinal colonization and nosocomial pneumonia.³

Before using proton pump inhibitors more widely in critically ill patients, the prevalence of tolerance to H₂ antagonists should therefore be identified, and the risks of infectious complications from alternative therapies be determined by outcome studies.

A. Timmins
Colchester, UK

Editor—Thank you for giving us the opportunity to reply to the correspondence regarding our editorial,¹ with which we agree. We do not recommend that drugs altering gastric pH are routinely given to critically ill patients without careful consideration. However, prophylaxis against stress-related gastric mucosal lesions is standard in many intensive care units (ICU). In our editorial, we would have liked to review tolerance to H₂ antagonists but space was limited. We therefore avoided discussing the risks of upper gastrointestinal colonization and nosocomial pneumonia in ICU patients treated with drugs altering gastric pH. Clearly, as clinical anaesthetists we should be aware of the protective role of gastric acid as a primary bactericidal barrier. A reduction in gastric acidity produced by agents such as proton pump inhibitors and H₂ antagonists may increase the incidence of infectious gastroenteritis and ventilation associated pneumonia.⁴

In addition, as indicated in several reports, proton pump inhibitors⁵ and H₂ antagonists⁶,⁷ may impair some aspects of neutrophil function such as production of oxygen free radicals. Several authors²,³ have concluded that this impairment may increase the risk of infectious complications. In contrast, others⁵,⁸ suggest that this impairment represents an anti-inflammatory response, which may be beneficial for suppression of systemic inflammation and healing of gastric ulceration. Therefore, we feel
that these agents should be given to ICU patients only following
careful consideration of the potential adverse and beneficial
effects.

K. Hirota
T. Kushikata
Hirosaki, Japan

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