Critically ill patients are at increased risk for bleeding in the upper part of the gastrointestinal tract (UGIB) from stress ulcers. Risk factors for the development of bleeding include mechanical ventilation for more than 48 hours and coagulopathy.1,2 Mechanisms that lead to bleeding are often multifactorial but include splanchnic vasoconstriction and hypoperfusion with altered mucosal blood flow, acid back-diffusion with reduction of bicarbonate secretion, and changes in gastrointestinal motility.3,4 The rate of clinically significant bleeding is low, although when such bleeding occurs, it is associated with prolonged stay in the intensive care unit, increased costs, and mortality.5

A variety of agents have been used to prevent stress ulcers, including antacids, barrier protection agents, histamine2 receptor antagonists (H2RAs), and proton pump inhibitors (PPIs). The effectiveness and complications of these various mechanisms of prophylaxis have been examined in numerous studies. Surveys of critical care physicians indicate that although stress-related UGIB is relatively uncommon, prophylaxis is necessary and H2RAs are generally used in most instances6; however, PPIs, despite their greater costs, are becoming more widely used.

In this issue of the American Journal of Critical Care, Ojiako et al7 review and compare the use and effectiveness of pantoprazole (a PPI) and famotidine (an H2,RA) on UGIB in critically ill patients receiving mechanical ventilation in a medical-surgical intensive care unit of a university hospital. Patient groups were similar with respect to clinical parameters, although scores on the Acute Physiology and Chronic Health Evaluation II differed somewhat between the groups. The group treated with the H2,RA was markedly larger (n = 522) than the group that received the PPI (n = 95), reflecting the practice of the unit. Nevertheless, bleeding occurred more commonly in the group treated with the PPI (P = .03), and patients treated with the PPI who were receiving hemodialysis experienced more bleeding than did dialysis patients who received the H2,RA. The overall number of patients who had bleeding in each group, however, was small.

The study by Ojiako et al7 highlights and expands on our knowledge of this subject. First, UGIB due to stress ulcers is relatively uncommon, and patients with increased risk can be identified. Second, in this and other studies, H2RAs appear to be cost-effective and clinically effective, although issues of thrombocytopenia and changes in mental status may be considerations in some patients. Finally, both PPIs and H2RAs may increase the risk of ventilator-associated pneumonia, although Ojiako and colleagues found no significant difference in the frequency of this complication, and this issue remains controversial.

REFERENCES


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