Gastroduodenal complication

Reusser et al. studied prospectively 40 critically ill neurosurgical patients who required prolonged mechanical ventilation to determine the current incidence of stress-related gastroduodenal erosions and ulcers, and to assess endoscopically the efficacy of acid-reducing prophylactic treatment. Nineteen patients were randomized to receive ranitidine plus antacids if necessary to maintain gastric pH at greater than or equal to 4. The remaining 21 patients were given no drug prophylaxis. Gastric pH was significantly (p less than .001) higher in the treated group: 78% of pH readings were at greater than or equal to 4 as compared to 32% in the control group. However, after five study days, incidence and severity of stress lesions were similar in the two groups: nine patients in each group had more than five erosions, one treated patient had a gastric ulcer, and one control patient had duodenal ulcerations. No patient experienced clinically relevant upper Gastrointestinal bleeding. The lack of severe stress bleeding and the low ulcer rate contrast with results from earlier reports on similar patient populations. Furthermore, drug prophylaxis had no detectable benefit, as assessed endoscopically. These findings suggest that routine stress lesion prophylaxis may not be necessary in critically ill patients with comparable risk factors [1].

To determine the efficacy of ranitidine in preventing clinically acute overt gastroduodenal complications (bleeding and/or perforation) after neurosurgery, 101 patients with nontraumatic cerebral disease considered at high risk of developing postoperative GD complications were randomized in a standard double-blind manner to receive either ranitidine (50 mg every 6 hours) or placebo medication preoperatively. Postoperative serial GD endoscopy was used to document the occurrence of complications: an overt symptomatic complication was defined as bleeding requiring blood transfusion and/or surgery. Fifty-two patients received ranitidine and 49 received a placebo preoperatively; 30 developed overt GD bleeding; nine of these received ranitidine and 21 received a placebo. Ranitidine significantly reduced the incidence of bleeding ($p < 0.05$). Multivariate logistic regression analysis revealed three factors of independent significance in predicting overt GD bleeding: use of a placebo drug, a gastric pH of less than 4, and a high daily volume of gastric output. The authors conclude that ranitidine is useful in preventing postoperative GD complications in high-risk neurosurgical patients [2].

1)
Reusser P, Gyr K, Scheidegger D, Buchmann B, Buser M, Zimmerli W. Prospective endoscopic study of stress erosions and ulcers in critically ill neurosurgical patients: current incidence and effect of acid-reducing prophylaxis. Crit Care Med. 1990 Mar;18(3):270-4. PubMed PMID: 2302950.
2)
Chan KH, Lai EC, Tuen H, Ngan JH, Mok F, Fan YW, Fung CF, Yu WC. Prospective double-blind placebo-controlled randomized trial on the use of ranitidine in preventing postoperative gastroduodenal complications in high-risk neurosurgical patients. J Neurosurg. 1995 Mar;82(3):413-7. PubMed PMID: 7861219.