



INTRAVENOUS PROTON PUMP INHIBITORS IN THE TREATMENT OF GASTROINTESTINAL BLEEDING

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In modern gastroenterology and surgery, the treatment of gastrointestinal bleeding remains an urgent issue. The complexity of this problem lies not only in the diversity of therapeutic tactics for the underlying disease but also in the management of its complications, including blood loss [3]. Many authors report that in 50–70% of cases, the cause of gastrointestinal bleeding is gastric or duodenal ulceration [4]. The highest mortality rate is observed among patients with severe blood loss. Typically, such patients are admitted to the hospital with profuse, massive hemorrhage and undergo emergency surgery at the peak of bleeding. Deaths among patients with mild or moderate blood loss are significantly less common [2, 4]. Similar findings have been reported by later studies [1, 2]. The overall mortality rate after emergency operations ranges from 23.0% to 23.6%, including 29.0% in cases of recurrent bleeding [3, 4]. The incidence of massive gastroduodenal hemorrhages remains high (34–36%). The key determinant of treatment outcomes in patients with gastrointestinal bleeding is the severity of hemorrhage. Therefore, one of the most challenging issues in managing these patients is providing surgical care to those admitted in a state of severe hemorrhage. Despite the use of modern temporary and definitive hemostatic methods, the treatment outcomes for patients with gastroduodenal bleeding remain unsatisfactory, with postoperative mortality ranging from 0.5% to 50%. Improvement of treatment outcomes in “high surgical risk” patients with severe gastroduodenal bleeding depends on:

- 1) Individualized surgical tactics based on the clinical and endoscopic prognosis of bleeding recurrence;
- 2) The effectiveness of infusion and transfusion therapy for post-hemorrhagic anemia and hypoxia;
- 3) Optimization of anti-relapse conservative therapy using therapeutic endoscopy.

Among the effective classes of antisecretory drugs widely used in the treatment of patients with erosive and ulcerative lesions of the stomach and

duodenum of various etiologies are proton pump inhibitors (PPIs) and H₂-histamine receptor blockers of the II (ranitidine) and III (famotidine) generations. The use of antisecretory drugs promotes healing of erosive and ulcerative lesions of the stomach and duodenum, thereby reducing the risk of recurrent bleeding. These agents are believed to prevent thrombus lysis. It has been established that the effectiveness of famotidine in erosive-ulcerative bleeding increases when the drug is used in combination with somatostatin inhibitors.

Endoscopic hemostasis remains the main method for treating gastrointestinal bleeding; however, it is ineffective in 15–20% of patients. Numerous studies and meta-analyses conducted in recent years have demonstrated that treatment outcomes significantly improve when endoscopic therapy is combined with pharmacological interventions. The advantages of PPIs over other groups of antisecretory drugs are due to their pharmacodynamic and pharmacokinetic properties, which have been confirmed by clinical trials and meta-analyses.

H₂-histamine receptor antagonists are inferior to PPIs in several clinically important aspects. Their disadvantages include a short half-life, leading to a brief duration of action (three to four hours), rapid development of tachyphylaxis, weak suppression of stimulated acid secretion, a relatively high frequency of side effects with prolonged use, and the need for dose adjustment in patients with renal insufficiency. For example, a comparative study of ranitidine and omeprazole showed that maintaining a pH above 4.0 during infusion required an increased dose of ranitidine, whereas the dose of omeprazole could, conversely, be reduced.

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