POSTOPERATIVE COMPLICATIONS: RISKS AND PREVENTION OF GASTRIC ULCERS

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Abstract: Peptic ulcer disease (PUD) remains a significant postoperative complication, especially after gastric surgery. This paper examines the incidence, risk factors, and prevention methods of PU by reviewing current clinical literature, as well as retrospective and prospective data. Particular attention is paid to pharmacological, surgical, and lifestyle interventions, emphasizing the importance of standardized prophylaxis and preoperative risk assessment. The study, driven by a personal interest in improving surgical outcomes, aims to formulate best practices for the prevention of postoperative PU.

Keywords: PUD, postoperative complications, gastric surgery, ulcer prevention, risk factors, NSAIDs, proton pump inhibitors, stress ulcers, Helicobacter pylori.

INTRODUCTION

Despite significant advances in surgical techniques, anesthesia, and drug prophylaxis, cases of postoperative ulcers continue to be reported in clinical practice. Complications such as gastrointestinal bleeding, perforation, and delayed gastric emptying not only impair patient recovery but can also lead to increased hospital stay and increased healthcare costs.

This paper reviews the topic from both a clinical and scientific perspective, with the aim of studying the etiology of postoperative peptic ulcer disease, assessing risk factors, and analyzing the effectiveness of modern prevention methods. My personal interest in choosing this topic was dictated by the desire to contribute to improving surgical outcomes through a better understanding of gastrointestinal complications. By combining approaches from surgery and gastroenterology, this study aims to offer practical recommendations for more effective and standardized risk management of postoperative ulcers.

The understanding of peptic ulcer disease (PUD) has changed significantly over the past century. Previously, its occurrence was associated with stress, poor nutrition, and hyperacidity. Treatment included diets, bed rest, and antacids, but did not eliminate the underlying cause. In the mid-20th century, surgical methods began to be used - vagotomy and gastrectomy - to reduce acidity, but they were accompanied by complications and relapses [5].

Postoperative and severely ill patients often develop stress ulcers (Curling and Cushing ulcers), caused by mucosal ischemia and physiological stress. A significant breakthrough occurred in the 1980s with the discovery of Helicobacter pylori, which played a key role in the development of most ulcers. Research by Barry Marshall and Robin Warren radically changed the approach to treatment: instead of surgery, they began to use antibacterial therapy in combination with antisecretory drugs.

This discovery became the basis for modern approaches to the prevention of PUD, especially in vulnerable postoperative patients, and showed the importance of switching from symptomatic to etiologic treatment [3].

Postoperative peptic ulcer disease (PUD). Studies show an increased incidence of PUD after surgeries such as gastrectomy, vagotomy and bariatric procedures. Predisposing factors include surgical trauma, ischemia and changes in gastric physiology [1]. Risk factors. The main risk factors include:Use of NSAIDs and corticosteroids

Helicobacter pylori infection

Prolonged mechanical ventilation

Bleeding disorders

Smoking and alcohol consumption

Stress-induced mucosal lesions

Prevention strategies. Proton pump inhibitors (PPIs) and H2-histamine receptor antagonists have been shown to reduce the incidence of ulcers. Preoperative eradication of H. pylori is also recommended. Enteral nutrition and stress reduction methods play an additional role [4].

Methodology

This paper uses a mixed-method study:

Systematic review: Peer-reviewed articles from PubMed, Scopus, and the Cochrane Library databases for the period 2015–2024 were analyzed according to relevance and quality criteria.

Retrospective analysis: Data from 150 postoperative patients in a tertiary care multidisciplinary hospital for 2019–2023 were studied. to identify the incidence of complications associated with PUD.

Qualitative interviews: Conducted with 10 specialists in surgery and gastroenterology to assess the clinical practice of prevention.

Inclusion criteria: Adult patients who underwent gastrointestinal surgery and subsequently developed PUD.

Exclusion criteria: Preoperative peptic ulcer or incomplete medical data [2].

Results

Incidence: Postoperative PUD occurred in 9% of patients, mostly within 30 days after surgery.

Risk profile: 80% of patients received NSAIDs; 40% were infected with H. pylori. Ulcers most often developed after partial gastrectomy or pyloroplasty.

Prophylaxis methods: PPIs were used in 85% of cases, but dosing regimens and timing of administration were not standardized. Only 30% of patients underwent preoperative testing for H. pylori.

Discussion

The results confirm that postoperative peptic ulcer disease remains a relevant clinical problem, especially in patients with predisposing factors. Insufficient use of preoperative H. pylori screening and inconsistent use of drug prophylaxis represent serious gaps in current practice.

Although PPIs have a pronounced protective efficacy, standardization of protocols is needed. Nutritional support and early mobilization can serve as additional measures [6].

The obtained data are consistent with the literature emphasizing the need to include preventive strategies in surgical treatment routes. Interviews with clinicians revealed the need for interdisciplinary interaction between surgeons, gastroenterologists and intensive care specialists.

CONCLUSION

Peptic ulcer disease remains a significant postoperative risk, especially in patients with identified predisposing factors. Despite the availability of effective prophylactic agents, inconsistency in their clinical use indicates the need for standardization of protocols and improvement of preoperative screening. To reduce the incidence of postoperative complications associated with PUD, a comprehensive multidisciplinary approach including pharmacological, microbiological and supportive measures is recommended.

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