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Prevention Of Erosive-Ulcerative Gastroduodenal Bleeding In Patients With Coronary Heart Disease

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Annotation: This article reviews the main approaches to the prevention of erosive-ulcerative gastroduodenal bleeding (EUGD) in patients with ischemic heart disease (IHD). There is an interaction between IHD and gastroduodenal diseases, which complicates the general health of patients. Acute erosive and ulcerative lesions of the stomach or duodenum belong to a heterogeneous group of diseases that arise due to many reasons. The most common cause is peptic ulcer disease. Secondary gastroduodenal ulcer against the background of cardiovascular diseases is a very relevant and, at the same time, insufficiently studied problem, and this issue is discussed.

Keywords: IHD, peptic ulcer disease, gastroduodenal bleeding, anticoagulants, antiplatelets, stress, prevention, treatment approach, multidisciplinary approach.

Introduction

Coronary heart disease (CHD) is a group of diseases that result from insufficient oxygen and nutrient supply to the heart muscle. CHD is one of the most common and leading causes of death in the world. Patients with CHD may also develop gastrointestinal diseases, including erosive-ulcerative gastroduodenal bleeding (EGD). This article discusses the prevention and treatment approaches for erosive-ulcerative gastroduodenal bleeding in patients with CHD.

The Relationship Between Coronary Heart Disease and Gastroduodenal Diseases

There is a complex relationship between CHD and gastroduodenal diseases. Gastrointestinal problems, particularly gastroduodenal bleeding, are common in patients with CHD. This mainly affects the mucous membrane of the stomach and duodenum, causing bleeding. Several factors contribute to the development of erosive-ulcerative gastroduodenal bleeding:

Procedural approaches: Anticoagulants and antiplatelet drugs used in the treatment of heart disease in patients with GERD may increase the risk of bleeding.

Increased gastric acid: Patients with GERD may experience changes in the acidic environment of the stomach, which can lead to gastroduodenal ulcers and bleeding.

Stress and emotions: GERD and gastroduodenal diseases are often associated with stress and emotional instability, which increase the level of high acidity in the stomach.

Prevention of Erosive-Ulcerative Gastroduodenal Bleeding

The following main approaches and preventive measures are recommended for the prevention of erosive-ulcerative gastroduodenal bleeding in patients with IUGR:

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1) Proton Pump Inhibitors (PPIs) and H2-Receptor Blockers PPIs and H2-blockers are effective agents for reducing gastric acid and improving the protective function of the gastroduodenal mucosa. PPIs should be used in patients with IUGR, especially to prevent acid erosive processes. These drugs are often successfully used to prevent gastroduodenal bleeding.
2) Proper Management of Anticoagulant and Antiplatelet Therapy Anticoagulants (e.g., warfarin, dabigatran) and antiplatelets (e.g., aspirin, clopidogrel) are used to prevent thrombus formation in IUGR patients. However, these drugs can exacerbate gastrointestinal problems. Therefore, they should be used with caution and in the correct dosage. During treatment, the dosage and regimen of these drugs should be monitored continuously.
3) Gastroduodenal Endoscopy and Diagnosis Early detection of gastroduodenal bleeding in patients with IBD is very important. Endoscopy can be used to examine the condition of the stomach and duodenum, which plays an important role in detecting bleeding. Early diagnosis and treatment are effective tools in preventing gastroduodenal bleeding.
4) Stress Management Stress and psychological state play an important role in IBD patients. Stress increases stomach acids and can lead to the development of ulcers. Stress management methods, such as relaxation techniques, yoga, meditation, and psychotherapy, are recommended for patients.
5) Proper Nutrition A proper diet is important for IBD patients. It is recommended to avoid harmful, hard, spicy or alcoholic beverages. The patients' diet should be bland and not too acidic. Especially before meals, it is necessary to choose light and vitamin-rich foods to avoid negative effects on the gastrointestinal system.
6) Monitoring and Continuous Treatment Patients with ICH should be regularly monitored by a cardiologist and gastroenterologist. The use of prophylactic treatment regimens and effective medications is important in preventing gastroduodenal bleeding among patients.

In recent years, the number of patients with acute gastric and duodenal ulcers has been increasing, and the incidence of life-threatening complications such as bleeding from acute ulcers is increasing.

The development of erosive gastroduodenal bleeding in patients with ischemic heart disease often develops as a result of the use of antiplatelet or anticoagulant drugs. According to various authors, taking maintenance doses of clopidogrel increases the risk of gastrointestinal bleeding by 1.1 times, taking aspirin by 1.8 times, and taking a combination of these two drugs by 7.4 times.

The literature does not provide a clear conclusion on the pathogenesis of gastroduodenal lesions. As a result, despite the fact that, according to the literature, the main method of treating acute and chronic gastroduodenal ulcers is to reduce acidity in the gastric cavity and create optimal conditions for wound healing, there are no general principles of conservative therapy.

Many authors see the improvement of the results of symptomatic treatment of erosive-ulcerative lesions of the gastroduodenal area and their complications in the improvement of local treatment methods.

Materials and methods.

During the study, 48 patients were examined and observed in the Cardiology Department of the hospital due to the instability of ischemic heart disease. Progressive angina caused hospitalization in 15 (31.2 %) patients, 20 (41.6 %) patients had hypertension, 13 (27.1 %) patients, in addition to ischemic heart disease, suffered from chronic pathology of the gastrointestinal tract.

The criteria for including patients in the study were: diagnosis of ischemic heart disease with symptomatic erosion and signs of gastric and duodenal ulcers, the patient's consent to the use of local

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treatment methods in the complex treatment of acute gastric ulcer and erosion, patients aged 20 to 80 years. Exclusion criteria from the study: the patient had acute myocardial infarction, acute circulatory disorders in the brain, severe hemostatic diseases.

Depending on the nature of erosive and ulcerative lesions of the gastroduodenal zone, the patients were distributed as follows: gastric and duodenal ulcer - 7 (15.9%) people; acute erosion of the stomach and duodenum - 2.8 (63.6%) people; acute gastric and duodenal ulcer - 9 (20.5%) people.

Speaking about the localization of erosive-ulcerative processes, it should be noted that 29 (65.9%) people had them in the stomach, and 15 (34.1%) people had them in the duodenum. The sizes of ulcerative defects ranged from 0.3 cm to 2.3 cm in diameter. Multiple erosions and ulcers in the stomach or duodenum were observed in 11 (25.0%) individuals, and combined lesions of the stomach and duodenum were observed in 7 (15.9%) individuals.

Among the patients, there were 28 men and 20 women, aged 20 to 80 years.

In accordance with the objectives of the study, all patients were randomly divided into two groups: the main group and the comparison group.

The main group included 23 patients, the average age of which was 61.8 ± 2.15 years. Patients in the main group, in addition to the treatment of the main disease, also received prevention of gastroduodenal bleeding by including methods of early diagnosis of acute erosion and gastric ulcer of the gastroduodenal zone and therapeutic intraluminal endoscopy in the complex of measures.

All patients in the main group underwent fibrogastroduodenoscopy (FGDS) on the day after hospitalization as part of a multidisciplinary approach. In the latter, biologically active donor sorbents of a new generation were applied locally to the identified acute erosion and gastric ulcer to prevent possible complications (bleeding, perforation, etc.). At the same time, in patients with erosion and gastroduodenal ulcers with a diameter of less than 1.0 cm, local treatment was carried out by the effect of granular sorbent on the defect area. In patients with ulcerative defects of 1.0 cm and more, a method was used to treat gastroduodenal ulcers, which provided for the combined effect of two sorbents: first, the lower part of the ulcer defect was insufflated with 0.2 g of diovin, which has a proteolytic and antibacterial effect, and then the wound was insufflated with 0.4 g of diovin, which has antibacterial and cytoprotective properties. Treatment of the second stage of the ulcer process (after cleansing the wound from necrotic tissue and fibrin) was carried out by insufflation of only 0.3 g of diovin. Local treatment of erosive and ulcerative defects was carried out with an interval of 4-5 days.

To evaluate the results of treatment, a comparison group (21 patients) was formed, whose average age was 59.5 ± 3.2 years. In the comparison group, diagnostic fibrogastroduodenoscopy was performed when the first clinical symptoms appeared; local treatment of acute erosive and ulcerative processes of the gastroduodenal zone was not performed in the comparison group. Otherwise, patients of the main and comparison groups were comparable in terms of age, gender, clinical symptoms, concomitant diseases, localization and size of erosive and ulcerative defects, and duration of observation.

Research results.

The work is based on the analysis of clinical observations, examination and treatment results of 48 patients with ischemic heart disease, in which the main disease process was complicated by erosive and ulcerative lesions of the upper gastrointestinal tract. 23 patients (the main group) were treated according to the developed method, including the use of local treatment methods of acute erosion and gastric ulcer to prevent possible complications. The comparison group included 21 patients, whose treatment was carried out using certain traditional methods of diagnosis, prevention and treatment without traditional endoscopic therapy.

Analyzing the obtained data, it was found that the clinical and endoscopic remission of the disease occurred much earlier in the main group of patients. Fibrogastroduodenoscopy, diagnosed in time within the framework of a multidisciplinary approach, allowed early detection of erosive and ulcerative lesions

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of the gastroduodenal zone and helped to prevent complications (especially bleeding) that could be carried out by preventive local therapy with granular sorbents. Clinical studies in the main group showed that after endoscopic insufflation, the sorbent in the body has the ability to swell under the conditions of the temperature and humidity of the body tissues, turning into a soft elastic gel layer covering the erosive-wounded surface. The effect of acid and enzymes of gastric and duodenal digestive juice on erosion and ulcer surface stopped immediately after insufflation of biologically active granular sorbent. Other authors also point to this cytoprotective property of granular sorbents.

Discussion

Erosive-ulcerative gastroduodenal bleeding (EUGB) is a significant complication in patients with coronary heart disease (CHD), primarily due to the coexisting risk factors such as the use of antiplatelet therapy, anticoagulants, and the presence of comorbid conditions like hypertension and diabetes. This discussion focuses on the mechanisms, risk factors, and strategies for preventing EUGB in these patients.

1. **Mechanisms of EUGB in CHD Patients:** The use of medications like aspirin and clopidogrel, which are commonly prescribed for CHD, can increase the risk of gastrointestinal (GI) bleeding. These drugs inhibit platelet aggregation, which, while preventing thrombosis in coronary arteries, can also impair the normal coagulation process in the gastric and duodenal mucosa. Moreover, patients with CHD are often older, and aging is associated with a decrease in mucosal defense mechanisms in the gastrointestinal tract.

2. **Risk Factors for EUGB in CHD Patients:** Several factors contribute to the higher incidence of EUGB in this group of patients:

   - **Antiplatelet and Anticoagulant Therapy**: Drugs such as aspirin, clopidogrel, and newer agents (e.g., direct oral anticoagulants) can cause mucosal damage in the stomach and duodenum, leading to ulceration and bleeding.
   - **Comorbid Conditions**: Conditions like hypertension, diabetes mellitus, and renal disease, which are often present in patients with CHD, can further predispose individuals to EUGB. Additionally, these comorbidities may influence the pharmacodynamics of drugs, contributing to bleeding risk.
   - **Helicobacter pylori Infection**: This infection is prevalent in patients with CHD and can significantly increase the risk of ulcer formation and subsequent bleeding.
   - **History of Peptic Ulcer Disease (PUD)**: Patients with a prior history of PUD are at higher risk for recurrence of ulcers and associated bleeding, especially when combined with the use of antithrombotic therapy.

3. **Prevention Strategies:** The prevention of EUGB in CHD patients requires a multifaceted approach, focusing on the careful management of the underlying coronary disease while minimizing gastrointestinal risks:

   - **Proton Pump Inhibitors (PPIs)**: The use of PPIs is a cornerstone in the prevention of aspirin- and clopidogrel-induced gastric ulcers. PPIs reduce gastric acid secretion, which aids in the protection of the gastric mucosa.
   - **H2-Receptor Antagonists and Antacids**: These can be used as alternative options in patients who cannot tolerate PPIs, though they are generally less effective.
   - **Coadministration of Gastroprotective Agents**: In patients at high risk of gastrointestinal bleeding, such as those with a history of ulcers or concomitant anticoagulant therapy, gastroprotective agents such as misoprostol or PPIs may be prescribed alongside antiplatelet or anticoagulant therapy.

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- **Helicobacter pylori Eradication**: Screening for H. pylori and eradication therapy should be considered in patients with CHD and peptic ulcer history, as this can significantly reduce the risk of ulcer recurrence and bleeding.
- **Risk Assessment**: A careful risk stratification should be performed for every patient with CHD. The need for long-term antiplatelet therapy should be weighed against the potential risk of gastrointestinal complications, and modifications in drug therapy or the introduction of protective agents should be considered based on the individual risk profile.

4. **Challenges and Future Directions:** Despite the availability of several preventive measures, the prevention of EUGB in CHD patients remains a clinical challenge due to the complex interplay of factors involved. Personalized approaches based on individual risk assessments, including genetic factors, comorbidities, and specific medication regimens, are crucial. Furthermore, more research is needed to explore new therapeutic agents and strategies that can reduce the risk of both coronary events and gastrointestinal bleeding.

In conclusion, the prevention of erosive-ulcerative gastroduodenal bleeding in patients with coronary heart disease requires a careful, multidisciplinary approach. It involves balancing the therapeutic needs for cardiovascular protection with the gastrointestinal risks posed by medications, comorbidities, and other factors. Tailored treatment plans, regular monitoring, and preventive strategies, such as the use of PPIs and H. pylori eradication, are essential components of care for these patients.

Conclusion:

1. Patients over 60 years of age with ischemic heart disease are at risk of developing acute erosion of the gastroduodenal zone and peptic ulcer. Over the past three years alone, the incidence of the underlying disease with the development of acute lesions of the upper gastrointestinal mucosa in a multidisciplinary hospital with cardiovascular disease has increased by 1.8 times. The main cause of bleeding in this category of patients was symptomatic gastroduodenal erosion and peptic ulcer (9.8% in 2018).
2. The recommended method of treating acute gastroduodenal ulcer with a combination of granular sorbent and diiothevin with diovine leads to a decrease in pain syndrome, a reduction in the healing time of erosive and ulcerative defects, and a 1.4-fold reduction in hospital stay.
3. The therapeutic program of complex therapy of patients with GERD, including timely diagnosis of erosive and ulcerative lesions of the stomach and duodenum within the framework of a multidisciplinary approach, local treatment of symptomatic erosion and gastroduodenal ulcer with biological effects, the use of active granular sorbents with a multidirectional effect, proton pump inhibitors, reduces the incidence of gastroduodenal bleeding by 9.8%, reduces the need for surgical intervention, and reduces postoperative mortality by 4.8%.

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