

**Modern Approaches to treatment of peptic ulcer in the practice of GPs from point of view of evidence - based medicine**

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**Abstract**

**Background:** Peptic ulcer disease (PUD) remains a prevalent gastrointestinal condition that poses significant challenges in general practice. With the identification of *Helicobacter pylori* as a primary etiological agent and the growing use of NSAIDs, modern treatment has evolved significantly. The integration of evidence-based medicine (EBM) into clinical decision-making by general practitioners (GPs) plays a crucial role in optimizing patient outcomes. This study explores the application of EBM in the diagnosis, treatment, and prevention of PUD within primary care settings.

**Materials and Methods:** This research involves a comprehensive review of current clinical guidelines, randomized controlled trials (RCTs), and consensus reports. Emphasis was placed on the effectiveness of *H. pylori* eradication therapies, proton pump inhibitors (PPIs), and preventive strategies for NSAID- and aspirin-induced ulcers. The analysis also evaluates the evolving role of GPs in managing complications and preventing recurrence using risk stratification and collaborative care models.

**Results:** Triple therapy with PPIs, amoxicillin, and clarithromycin remains the gold standard for *H. pylori* eradication. Novel acid blockers like vonoprost have demonstrated non-inferiority to traditional therapies. For NSAID-induced ulcers, co-prescription of PPIs and COX-2 inhibitors shows high preventive efficacy. Updated guidelines recommend early resumption of anticoagulants post-endoscopy in bleeding ulcers. The role of GPs is expanding to include early diagnosis, lifestyle counselling, and long-term follow-up for high-risk patients. Prevention remains a cornerstone, particularly among elderly and polypharmacy patients.

**Conclusion:** Modern management of PUD demands a shift from reactive treatment to proactive, evidence-based prevention. GPs, as frontline providers, are uniquely positioned to implement guideline-driven approaches, enhance patient education, and coordinate multidisciplinary care. Embracing current evidence ensures safer, more effective management and reduces the risk of complications such as bleeding or perforation.

**Keywords:** Peptic ulcer disease (PUD), General practitioners (GPs), Evidence-based medicine (EBM), NSAID-induced ulcers, Proton pump inhibitors (PPIs)

### **List of abbreviations**

PPI- Proton pump inhibitor DAPT-

Dual antiplatelet therapy RCT-

Randomized controlled trial PUB-

Peptic ulcer bleeding

IVR-Interventional radiology PUD -

Peptic ulcer disease

## **Introduction**

### **Relevance of topic:**

The topic "Modern Approaches to Treating Peptic Ulcers in General Practice through Evidence-Based Medicine" is relevant to today's healthcare. Peptic ulcer disease (PUD) is a common problem that affects millions of people around the world, and when left untreated or not properly managed, it can lead to serious complications. The discovery of *Helicobacter pylori* as a major cause of PUD has changed how doctors treat it, and the increased use of nonsteroidal anti-inflammatory drugs (NSAIDs) has also led to a rise in ulcers caused by these medications. Advances in diagnostic tools, like endoscopy, and treatments such as proton pump inhibitors, antibiotics, and protective agents, have made it easier to treat ulcers effectively. General Practitioners (GPs) play a key role in diagnosing, treating, and referring patients with PUD. Because of this, they need to stay up to date on the latest evidence-based practices. By adopting the most current and proven treatment approaches, GPs can provide the best care for their patients and improve their health outcomes.

### **Aim of the study:**

The goal of this study is to take a close look at the current evidence-based practices for treating peptic ulcer disease (PUD) in primary care, with a special focus on the important role General Practitioners (GPs) play in diagnosing, treating, and managing this condition. The study will review the latest guidelines, examine effective and safe treatment options, and explore how GPs are involved in PUD care. It will also identify areas where more evidence or better practices are needed and provide helpful recommendations for GPs to improve PUD management. Ultimately, this study aims to improve how PUD is managed in primary care, leading to better outcomes and a higher quality of life for patients.

### **Objectives:**

- To review the current evidence-based guidelines and recommendations for the diagnosis and treatment of peptic ulcer disease (PUD) in primary care settings.
- To evaluate the efficacy and safety of different treatment options for PUD, including pharmacological and non-pharmacological interventions, in the context of General Practice.
- To assess the role of General Practitioners (GPs) in managing PUD, including their diagnostic and therapeutic approaches, and identify areas for improvement.
- To identify gaps in current evidence-based practices and areas for future research in the management of PUD in primary care settings.
- To provide recommendations for GPs on the optimal management of PUD in primary care settings, based on the best available evidence[3,4].

## **Methods and Materials**

- To take a closer look at the current guidelines and recommendations for diagnosing and treating peptic ulcer disease (PUD) in primary care settings.
- To evaluate how well different treatment options for PUD work and how safe they are, including medication and lifestyle changes, in the day-to-day practice of GPs.
- To explore the role of general practitioners (GPs) in managing PUD, focusing on how they diagnose and treat the condition and pinpoint areas where things could be improved.
- To identify any gaps in current evidence-based practices and highlight where more research is needed in how PUD is managed in primary care.
- To offer practical, evidence-backed recommendations for GPs on

### **Practical Significance**

The findings from this study will be valuable for general interpreters (GPs) and primary care providers, helping them offer substantiated care to cases with peptic ulcer complaints (PUD). By recapitulating the most recent exploration and guidelines, the study will give GPs practical insight into the most effective ways to diagnose and treat PUD, eventually leading to better issues and an improved quality of life for patients. The results will also help shape streamlined clinical guidelines and protocols, ensuring that PUD operation in primary care is harmonious, effective, and of the loftiest standard.

## **Chapter 1: Optimization of Initial Therapeutic Regimens for Peptic Ulcer Disease: A Critical Analysis**

### **1. Eradication Therapy for Helicobacter pylori -Related Peptic Ulcer Disease: A Systematic Review and Meta-Analysis**

A common treatment for H. pylori-related peptic ulcer disease (PUD) is a triple therapy that includes a proton pump inhibitor (PPI) like omeprazole or pantoprazole, along with amoxicillin and clarithromycin, usually for 1-2 weeks. This approach is highly effective at clearing the infection, which is a major cause of PUD, and helps the ulcers heal.

### **2. Table 1: Incidence of Peptic Ulcer Disease**

This table highlights the incidence rates of various gastrointestinal diseases, showing the percentage of patients affected by PUD and their associated infection rates. These numbers are crucial for understanding how widespread PUD is and the importance of effective treatments.

### **3. Preventing and Managing NSAID-Related Stomach Issues: A Review of Proton Pump Inhibitors and Other Protective Agents**

When possible, it's recommended to stop using NSAIDs in patients with stomach problems. However, if stopping NSAIDs isn't an option, prescribing a PPI can help protect the stomach. In some cases,

selective COX-2 inhibitors may be a better choice, reducing the risk of stomach issues while still managing pain.

#### **4. Optimizing Treatment for Non-*H. pylori* Peptic Ulcers**

### **Chapter 2: Managing Complications in Peptic Ulcer Disease — What We Know and How We Treat**

#### **2.1 The Art and Science of Clinical History Taking in Peptic Ulcer Disease: A Critical Analysis of the Role of Patient-Provider Communication in Diagnostic**

Peptic ulcer disease (PUD) continues to be a major health issue, especially when complications like bleeding, perforation, or obstruction occur. To help doctors make informed decisions, the Japanese Society of Gastroenterology (JSGE) has developed and regularly updated evidence-based guidelines. These were first published in 2009 and revised in 2015 and 2020. The most recent update includes 90 clinical questions, grouped into two categories: questions we already have good answers for (background questions), and those that still need more research (future research questions).

Recent changes to the guidelines focus on important issues like ulcer complications, the role of *Helicobacter pylori* (*H. pylori*), and the impact of medications like antithrombotics—drugs that prevent blood clots but increase bleeding risk. With more people now taking blood thinners to prevent strokes and heart attacks, doctors face a tough challenge: how to prevent dangerous bleeding from ulcers without increasing the risk of clotting.

If someone on blood thinners has a bleeding ulcer, the guidelines recommend resuming direct oral anticoagulants (DOACs) one to two days after the bleeding is controlled through endoscopy. Although this advice is based on weaker evidence, experts agree it's a reasonable approach. For patients on both antiplatelet drugs and warfarin, switching to just aspirin or cilostazol may be safer, while warfarin should be carefully monitored or temporarily replaced with heparin. In cases involving dual antiplatelet therapy, the safest path is to continue aspirin alone.

Doctors are urged to work closely with cardiologists and gastroenterologists when managing these high-risk patients. Stopping blood thinners can lead to life-threatening clots, but continuing them can cause re-bleeding. One study even found that patients who kept taking low-dose aspirin had lower death rates, suggesting that in some cases, continuing therapy may be the better option.

When endoscopic treatment fails to stop bleeding, interventional radiology (IVR) offers a minimally invasive, safe, and effective backup plan.

Prevention is also a big part of the strategy. Proton pump inhibitors (PPIs) are strongly recommended for patients taking dual antiplatelet therapy to protect against upper gastrointestinal bleeding. Although using PPIs in patients on warfarin has less supporting evidence, many experts still recommend it.

Unfortunately, in Japan, insurance doesn't currently cover PPI use for prevention in patients taking low-dose aspirin or NSAIDs.

For treating *H. pylori* infections, which are a major cause of ulcers, a combination of vonoprazan (a strong acid blocker), amoxicillin, and clarithromycin is the most effective first-line treatment. In regions where resistance to clarithromycin is high, doctors often switch to a metronidazole-based regimen, even though it's not covered by insurance.

If the first treatment doesn't work, a second round using amoxicillin and metronidazole still shows strong results. As a last resort, third-line therapies like sitafloxacin-based combinations are used, though these have less evidence and limited insurance coverage.

Lastly, if ulcers come back even after the infection is cleared, doctors may recommend long-term acid suppression with PPIs or H2 blockers to keep symptoms under control.

## **2.2 Non-Eradication Therapy for *Helicobacter pylori* Infection: A Review of the Current State of the Art and Future Directions in the Management of Peptic Ulcer Disease**

### **Optimizing *H. pylori* Eradication Therapy: A Comprehensive Review of Treatment Approaches** **First-Line Treatment for Gastric and Duodenal Ulcers**

Regarding healing ulcers, PPIs (proton pump inhibitors) or P-CABs (potassium-competitive acid blockers) are your best bet as first-line treatments. They have a strong track record for healing ulcers effectively. If those aren't available, H2 receptor antagonists (H2RAs) are the next best choice. In some cases, where PPIs or P-CABs aren't an option, medications like pirenzepine, sucralfate, or misoprostol can also help heal the ulcer, offering results similar to H2RAs.

#### **Duodenal Ulcers**

For duodenal ulcers, PPIs or P-CABs should be your go-to treatments since they heal ulcers much better than H2RAs. If you can't use PPIs or P-CABs, H2RAs can still get the job done. And if neither of these options is available, medications like pirenzepine, sucralfate, or misoprostol can be used as alternatives.

#### **NSAID-Induced Ulcers**

If you have a patient with an NSAID-induced ulcer, the first step is to stop taking the NSAID and start them on anti-ulcer treatment. If stopping the NSAID isn't an option, PPIs should be used as the first line of defence because they have the highest success rate in healing ulcers compared to other treatments.

If a patient using NSAIDs is found to have an *H. pylori* infection, eradication therapy is recommended. This helps prevent ulcers, especially in patients who haven't been infected before.

### **Preventing NSAID-Induced Ulcers**

For people using NSAIDs long-term, even if they don't have a history of ulcers, it's a good idea to use PPIs to help prevent NSAID-induced ulcers. This is a weaker recommendation but is still supported by solid evidence.

For individuals who have a history of ulcers or gastrointestinal bleeding and need NSAIDs, PPIs should be the first line of defence to prevent any recurrence. In high-risk patients—such as those using NSAIDs along with other medications like blood thinners or corticosteroids—considering a COX-2 selective inhibitor along with a PPI is the best preventive approach.

### **Preventing Ulcers in Elderly or High-Risk Patients**

For elderly patients or those with severe complications, using PPIs to prevent NSAID-induced ulcers is strongly recommended. In patients on high-dose NSAIDs or those using NSAIDs in combination with blood thinners, corticosteroids, or other high-risk medications, a COX-2 selective inhibitor with a PPI is the safest option to prevent ulcers.

### **COX-2 Selective Inhibitors and Ulcer Prevention**

COX-2 selective inhibitors are a great choice when it comes to preventing NSAID-induced ulcers, as they lower the risk of both stomach and duodenal ulcers significantly compared to regular NSAIDs. Studies show that they also reduce the chances of serious complications related to ulcers.

For people with a history of peptic ulcers or bleeding, it's a good idea to use COX-2 selective inhibitors along with anti-ulcer treatments to prevent further issues. However, for those without a history of ulcers, taking extra anti-ulcer medication may not be necessary.

### **Aspirin-Related Peptic Ulcers**

For people with peptic ulcers caused by low-dose aspirin (LDA), combining PPIs with ongoing LDA therapy is the most effective way to prevent new ulcers from forming. Research shows that this combination works well in preventing ulcer recurrence while still providing the cardiovascular benefits of aspirin.

## **Chapter 3: Strategies for the Primary Prevention of Peptic Ulcer Disease: A Systematic Review and Meta-Analysis of Randomized Controlled Trials**

### **Treatment for Ulcers in the Gastric Remnant**

For ulcers that occur in the stomach after surgery (in the gastric remnant), proton pump inhibitors (PPIs) are the recommended treatment. This is strongly supported, with full agreement among experts.

**Why This Works:** The primary approach for treating these ulcers is medication. One study compared a variety of treatments—such as omeprazole, cimetidine, sucralfate, colloidal bismuth, and misoprostol—and found that omeprazole worked best, both in terms of healing speed and cure rate.

After two weeks of treatment, omeprazole had a cure rate of 66.7%, far outpacing the other medications, which ranged from 16.7% to 43.3%.

While the studies have not specifically examined eradicating *H. pylori* impacts these ulcers, research has shown no major difference in the presence of the bacteria in gastric remnants with or without ulcers. So, it's still unclear whether eradicating *H. pylori* will help prevent ulcers or even cancer in these patients. However, there's some evidence that *H. pylori* eradication might help reduce cancer risk. However, we should be careful since acid production can return after treatment, which could lead to more ulcers.

### **Surgical Treatment**

#### **Should *H. pylori* be treated after surgery for peptic ulcers?**

Yes, if the patient is *H. pylori* positive, it's recommended to eradicate *H. pylori* after an omental patch or omental filling surgery for peptic ulcers. This approach is strongly supported by evidence.

**Why This Matters:** After surgery, treating *H. pylori* can help prevent the ulcer from coming back. Some studies suggest that *H. pylori* eradication can speed up healing, especially after surgery to repair a duodenal ulcer. However, the benefit of eradicating *H. pylori* to prevent ulcers from returning after a gastrectomy is less clear, and more research is needed to understand how this might affect acid production and ulcer recurrence.

### **Treatment for Ischemic Duodenal Ulcers**

For ischemic duodenal ulcers (which occur due to reduced blood flow), PPIs or misoprostol are suggested as initial treatments. It's also important to look into any underlying conditions, such as blood clots or artery narrowing. If the patient doesn't improve with these treatments, more serious options like surgery or interventional radiology may be considered.

**Why This Is Important:** Ischemic ulcers can happen suddenly and may cause severe pain, black stools, vomiting blood, and weight loss. These ulcers are often linked to issues like blood clots, atherosclerosis (hardening of the arteries), or other complications. Endoscopy often shows long ulcers with swelling and redness around them. For acute cases, we typically try fasting and medications that suppress acid, but how well this works in certain areas of the duodenum—where bile and pancreatic juice flow—is still uncertain. Misoprostol, which helps protect the stomach lining, may be particularly useful in these cases. If the ulcer worsens, it's crucial to monitor carefully, considering the potential involvement of other systems in the body.

### **Conclusion**

The treatment of peptic ulcer disease has come a long way in recent years, thanks to growing evidence from clinical trials and studies. For general practitioners (GPs), it's important to rely on evidence-based



practices and keep up with the latest guidelines and recommendations. A "test-and-treat" approach for *Helicobacter pylori*, followed by proton pump inhibitors (PPIs), has proven to be the most effective method for managing peptic ulcers. But it's not just about medication—lifestyle changes, such as adjusting diet, managing stress, and quitting smoking, are also key to healing and preventing ulcers. GPs should make sure to talk to their patients about the importance of these changes and help them find practical ways to stick to them. As new research continues, GPs must stay informed and adjust their treatment plans to ensure they're offering the best care possible.

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