

Frequency of Peptic Ulcer Disease in Patients with Chronic Use of Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)

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ABSTRACT

Objective: To ascertain how often individuals on chronic nonsteroidal anti-inflammatory Drugs (NSAIDs) develop peptic ulcer disease.

Study Design: A Cross Sectional Study

Place and Duration of Study: This study was conducted at the Department of Gastroenterology, Qazi Hussain Ahmad Medical Complex Nowshera, from June 2022 to June 2023.

Methods: During the study period all patients with endoscopic findings of peptic ulcer and chronic use of NSAIDs were enrolled for the study. Age, gender, current indications for NSAIDs use, and period of NSAID use were noted. Patients were also assessed for other associated risk factors.

Results: During the study period 184 patients had peptic ulcers on endoscopy. In 15.8% (29/184) of individuals, peptic ulcers was caused by chronic NSAIDs use. Arthritis and malignancy related pain were the most common indications for chronic NSAIDs use and diclofenac was the most commonly used NSAIDs. H. pylori-infection was the most common associated risk factor (48%).

Conclusion: Our study showed the significant association of the chronic NSAIDs use and multiple other risk factors with the peptic ulcer disease. It emphasizes cautious use of NSAIDs in high risk patients, particularly who have multiple other risk factors.

Key Words: Peptic Ulcer Disease, Chronic Use, Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)

Citation of article: Ahmad S, Naeem M, Hamid Ullah, Ali L. Frequency of Peptic Ulcer Disease in Patients with Chronic Use of Nonsteroidal Anti-Inflammatory Drugs (NSAIDs). *Med Forum* 2024;35(1):73-75. doi:10.60110/medforum.350116.

INTRODUCTION

Peptic ulcer is one of the most common diseases of the gastrointestinal tract with estimated lifetime prevalence of approximately 5–10% in the general population.¹ It is defined as a breach in the mucosa of the alimentary tract. It is produced when there is imbalance between the aggressive factors like gastric acid, and proteolytic enzyme and protective factors^{2,3} like mucus and bicarbonate secretion and prostaglandins production, combined with superimposed injury from environmental or immunologic agents.⁴

H. pylori infection, cigarette smoking, alcoholism, psychological stress, ischemia, certain medications like

chronic NSAIDs and corticosteroid use, antiplatelet and anticoagulants are the common risk factors for peptic ulcer disease. Nonsteroidal anti-inflammatory drugs (NSAIDs) are widely prescribed and marketed to treat pain and inflammation, and are therefore, the leading cause of non-H—Pylori peptic ulcers.⁵

Chronic use of NSAIDs causes suppression of mucosal prostaglandin (PGE2) and direct irritative topical effect. Prostaglandins stimulate mucus and bicarbonate production, and regulates blood flow to the GI tract.⁶ Its inhibition by NSAIDs leads to loss of alimentary protective factors and in combination with multiple environmental risk factors and H. pylori infection leads to peptic ulcer disease.⁷

Peptic ulcer disease predominantly presents with dyspeptic symptoms like epigastric burning sensation, epigastric pain, pyrosis, nausea, vomiting, bloating and belching.⁸ It may sometimes present with complications like anemia, hematemesis, melena, perforation, gastric or duodenal outlet obstruction or peptic stricture. Malignant formation is rare and related to underlying gastritis.^{9,10}

Since H. pylori infection is decreasing, NSAID-related peptic ulcers are rising because of the injudicious use of the NSAIDs without a prescription^{11,12}. The aim of our study is to find out the frequency of Peptic ulcer disease in our population because of chronic NSAIDs use so

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Received: August, 2023

Accepted: September, 2023

Printed: January, 2024

that the issue is highlighted and appropriate steps taken for its prevention in the future.

METHODS

This is a cross sectional study conducted in the Gastroenterology department of Qazi Hussain Ahmad Medical Complex, Nowshera from June 2022 to June 2023. All patients with endoscopic findings of peptic ulcer and chronic use of NSAIDs were enrolled for the study. Chronic NSAID use is defined as if these medications are taken more than three times a week for more than three months.

Age, gender, current indications for NSAIDs use, and period of NSAID use were noted. Patients were also assessed for associated risk factors like H. pylori infection, alcoholism, smoking, tobacco chewing etc.

RESULTS

During the study period 184 patients had peptic ulcers on endoscopy. In 15.8% (29/184) of individuals, peptic ulcers was caused by chronic NSAIDs use (figure 1). Arthritis and malignancy related pain were the most common indications for chronic NSAIDs use (table 1). Diclofenac was the most commonly used NSAIDs, linked to peptic ulcer in 41.37% (12/29) of individuals (table 2). Duodenal ulcers outnumbered gastric ulcers, 41.37% (12/29) and 34.48% (10/29) respectively (table 3). H. pylori-infection was also noted in 48% (14/29) of the patients (figure 2). Other peptic ulcer risk factors were noted and also shown in figure 2.

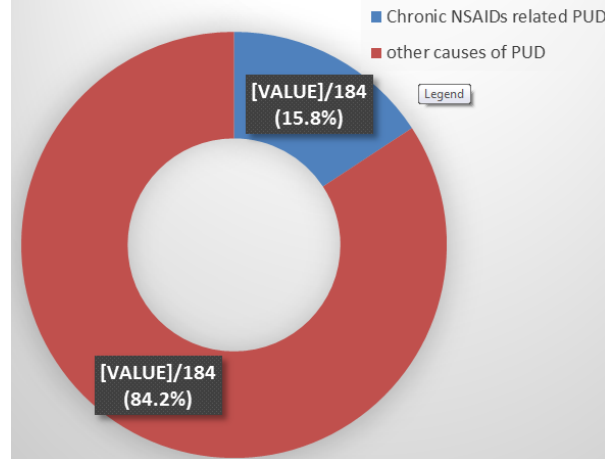


Figure 1: Etiological pattern of PUD

Table No. 1: Common indications for chronic NSAIDs use

Indications	Percentage (N) of Patients
Arthritis	38% (11/29)
Malignancy related pain	31% (9/29)
Chronic body aches	10.3% (3/29)
Chronic Headache	10.3% (3/29)
Others	10.3% (3/29)

Table No. 2: NSAIDs Linked to Peptic Ulcers in the Study

NSAID	Percentage of Patients with Peptic Ulcers
Diclofenac	41.37% (12/29)
Neporoxen/piroxicam	20.68% (6/29)
Others (ibuprofen, mephenamic acid, aceclofenac, ketorolac etc.)	20.68% (6/29)
Combination of NSAIDs	17.24% (5/29)

Table No. 3: Location of Peptic Ulcers in Patients

Type of Ulcer	Percentage of Patients with Peptic Ulcers
Duodenal Ulcer	41.37% (12/29)
Gastric Ulcer	34.48% (10/29)
Ulcers in both stomach and duodenum	24.13% (7/29)

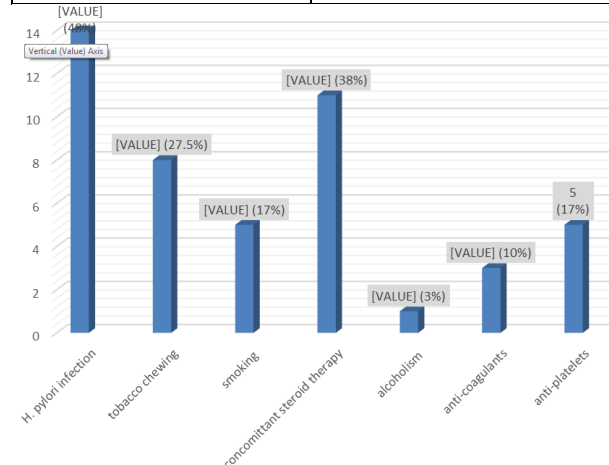


Figure No. 2: Associated risk factors

DISCUSSION

Peptic ulcer disease is a well-known complication of NSAID use. Our study showed comparatively high prevalence (approximately 16%) of peptic ulcer disease in patients with chronic NSAIDs use as compared to other studies which showed the prevalence of 6-11%^{13,14}.

In our study diclofenac and naproxen/piroxicam are the most common NSAIDs associated with peptic ulcer, which is similar to findings in other studies¹². However, in our study naproxen/piroxicam was the second most common NSAID used as compared to aspirin as in other studies¹². Diclofenac is the most widely prescribed analgesic in our population because of the easy availability and low cost. This finding emphasizes the need for cautious use of this drug, particularly in patients who already have multiple other risk factors for peptic ulcer disease like having a history of prior peptic ulcer or are receiving concurrent steroid treatment.

In our study like most of the other studies, NSAIDs induced duodenal ulcer outnumbered gastric ulcer. According to our data the correlation between NSAID-

induced peptic ulcers and *H. pylori* infection exists in approximately half of the patients with peptic ulcer¹⁵. It emphasizes the importance of *H. pylori* testing and eradication prior to initiation of NSAIDs use¹⁶.

Finally, the research emphasizes how important it is to take into account various other risk variables like drinking alcohol and smoking when discussing NSAID-related peptic ulcers. In summary, this research offers important new information on the prevalence and risk factors of NSAID-induced peptic ulcer disease in local population. With this knowledge, medical professionals may prescribe NSAIDs more cautiously and create individualized treatment plans for individuals who are susceptible to peptic ulcers because of the associated risk factors¹⁷.

CONCLUSION

Our study showed the significant association of the chronic NSAIDs use particularly diclofenac and aspirin with the peptic ulcer disease. It emphasizes cautious use of NSAIDs in high risk individuals, particularly who have multiple other risk factors like *H. pylori* infection.

Author's Contribution:

Concept & Design of Study: Shakeel Ahmad
 Drafting: Muhammad Naeem,
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 Revisiting Critically: Shakeel Ahmad,
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 Final Approval of version: Shakeel Ahmad

Conflict of Interest: The study has no conflict of interest to declare by any author.

Source of Funding: None

Ethical Approval: No.122/BKMC dated 15.06.2022

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