Study on Socio-Demographic Profile of Peptic Ulcer Disease in A Tertiary Care Teaching Hospital, Dhaka, Bangladesh

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ABSTRACT

Background: The prevalence and socio-demographic factors of peptic ulcer disease (PUD) have changed remarkably now a day. Currently, peptic ulcer disease has considered as a multifactorial health problem.

Objective: To determine the socio-demographic factors of Peptic ulcer disease among patients attending Bangladesh Medical College, Dhanmondi, Dhaka, Bangladesh.

Methods: This is a hospital-record based cross sectional descriptive study executed in a tertiary care teaching hospital, Dhanmondi, Dhaka. The study group comprises 200 PUD patients enrolled in our Bangladesh Medical College Hospital from July 2019 to December 2020. Analysis of data was done by using SPSS 15 software. Prevalence of PUD patients among study population was calculated by using percentage and the strength of association of socio-demographic factors were evaluated in our study.

Results: Total prevalence of PUD among the studied group was 83.5%; gastric ulcer 54.5% and duodenal ulcer 29%. Majority 56% were female patients in the age group of 41-50 years. Most prevalent endoscopic finding was erosive antral gastritis (48.50%), PUD was diagnosed predominantly among unemployed population (48.50%) in the urban locality (62%). The cardinal features were pain precipitated by certain food (55.69%) and loss of appetite (52.09%). Regarding risk factors spicy food (55.69%) has secured the first position in our study followed by smoking (34.13%) and stress (18.56%).

Conclusion: Multifactorial variables were considered as risk factors for PUD. Population based endoscopic studies can detect PUD at its earliest possible stage and create awareness among population to prevent its further progression.

Keywords: Peptic ulcer disease, Socio-demographic profile.

I. INTRODUCTION

Peptic ulcer disease is a common problem around the world. An imbalance between acid secretion and mucosal defenses that resist acid digestion results into PUD. The ulcer breaks the mucosal lining of stomach, the first part of duodenum or the lower end of the esophagus sometimes. Gastric and duodenal ulcers are two variants of PUD. The lifetime risk of having PUD approximately 10% [1]. More than 90% patients of PUD are infected with Helicobacter pylori (H. pylori) a gram-negative, highly motile, microaerophilic, fastidious bacterium which inhabits in the human gastric mucosa. It is also responsible for variety of diseases like gastritis, mucosa associated lymphoid tissue lymphoma (MALToma) even in the pathogenesis of gastric cancer [2]. The other etiologies found important for the development of PUD are Non-steroidal anti-inflammatory drugs (NSAID), smoking, alcohol, stress due to any critical illness, Zollinger-Ellison syndrome, and liver cirrhosis [3], [4]. The frequent manifestations of the disease comprise upper abdominal pain precipitated by empty stomach or after having food, belching, vomiting, poor appetite, bloating and weight loss [3], [5]. Untreated PUD can result into variety of serious complications like bleeding (around 15%), perforation, gastric outlet obstruction and eventually malignancy [6]. The main objective of this study is to identify the socio-demographic factors associated with PUD and to estimate their relative impact on ulcer incidence.

II. MATERIALS AND METHODS

A. Study Design & Area

This a population based cross sectional observational study carried out in both indoor and outdoor Medicine department of Bangladesh Medical College Hospital (BMCH) located at Dhanmondi in Bangladesh.
B. Study Period
This study was carried out from July 2019 – December 2020.

C. Study Population
All cases of confirmed diagnosis of PUD were included in the study population fulfilling the inclusion and exclusion criteria.

D. Inclusion Criteria
Confirmed diagnosis of PUD by Oesophago-gastro-duodenoscopy (OGD).
Age more than 20 years.
Informed written consent.

E. Exclusion Criteria
Pregnant women.
Patients not willing to participate in the study.
A critically ill patient with altered higher psychic function.

F. Sampling Technique
Consecutive convenient (purposive) sampling.

G. Data Collection
All the subjects underwent medical history assessment, general clinical examination, before enrollment. Patients gave informed consent before they participated in the study. Once informed consent was obtained, all participants were asked to complete a questionnaire to collect basic demographic information such as age, gender, place of living, marital status, occupation, endoscopic findings and risk factors contributing for PUD.

All study participants consisted of 200 patients visited to BMCH with various symptoms like heartburn, upper abdominal pain, bloating, early satiety, nausea or bloating underwent OGD to enable appropriate disease diagnosis.

H. Data Analysis
Data was recorded into semi-structured pre-tested pro forma. It was entered into Microsoft Excel and analyzed using SPSS v16.0. Summarization of data was done according to data types and appropriate statistical tests were done. The various modes of clinical presentation were expressed as the total number of patients presenting with a particular presenting feature and then calculated as a percentage of the total number of patients. Statistical analysis was done by using appropriate statistical tool like ‘chi-square’ test, student ‘t’ test, where applicable. A P-value of <0.05 was considered to be statistically significant and a P value of >0.05 (p>0.05) was taken as not significant. Informed consent was taken in all the cases and the records were kept confidentially.

I. Ethical Clearance and Informed Consent
The study was carried out after obtaining approval from the Institutional Ethical Committee. The participants were briefed about the purpose of the study and informed consent was obtained prior to the data collection.

III. Results

A. Total Prevalence of PUD among the Studied Respondents
In 200 endoscopies, PUD was found in 167 patients and normal endoscopy in 33 study participants. Among the PUD group 54.5% had gastric ulcer and 29% had duodenal ulcer (Table 1).

B. Age and Gender wise distribution of Study Group
Among 167 PUD cases majority (55.69%) were female patients (Fig. 1).

C. Endoscopic Findings Associated with PUD
The analysis of endoscopic findings associated with PUD (Table 3) showed that erosive antral gastritis (48.50%) was the most frequent endoscopic finding. Esophagitis and gastritis were more frequently observed in the gastric ulcer group and Duodenitis was more prevalent among duodenal ulcer patients.
TABLE 3: ENDOSCOPIC FINDINGS ASSOCIATED WITH PUD

| Endoscopic Findings | Gastric Ulcer | Percentage (%) | Duodenal Ulcer | Percentage (%) | Total (%) |
|---------------------|--------------|----------------|----------------|----------------|-----------|
| Gastritis           | 19           | 17.43          | 3              | 5.17           | 22 (13.17%) |
| Antral Gastritis    | 27           | 24.78          | 17             | 29.32          | 44 (26.36%) |
| Erosive Antral Gastritis | 53       | 48.62          | 28             | 48.27          | 81 (48.50%) |
| Pan gastritis       | 3            | 2.75           | 2              | 3.45           | 5 (2.99%)  |
| Esophagitis         | 5            | 4.59           | 1              | 1.72           | 6 (3.59%)  |
| Duodenitis          | 2            | 1.83           | 7              | 12.07          | 9 (5.39%)  |
| Total               | 109          | 100            | 58             | 100            | 167 (100%) |

D. Marital Status of Study Group

In our study 51.50% PUD patients were found married which was not proven statistically significant here (p=0.665) (Table 4).

| Marital Status | Male | Female | Total (%) |
|----------------|------|--------|-----------|
| Single         | 47   | 34     | 81 (48.50%) |
| Married        | 27   | 59     | 86 (51.50%) |
| Total          | 74   | 93     | 167 (100%)  |

E. Occupational Status and Place of living Among PUD Patients

There was a significant correlation of occupational status among the PUD patients in our study (p<0.044) [Figure 2]. Most of our PUD patients belonged from urban areas (89 patients) in comparison to the rural areas (76 patients) (Fig. 3) which was not found statistically significant here (p<0.324).

F. Characteristics of PUD among Study Group

Table 5 illustrated the characteristics of PUD among the study population. About 7.78% of patients described the pain as severe, majority had mild pain (52.09%) followed by 43.71% had moderate pain. Most of the cases (55.69%) reported that pain was precipitated by certain food. Regarding symptoms and signs 52.09% reported loss of appetite followed by nausea and vomiting 41.32% and indigestion 35.33%. Regarding the risk factors spicy food intake came in first place (55.69%) followed by smoking (34.13%), stress (18.56%) and prolonged use of NSAID (16.17%).

| Characters                  | n (total = 167) | Percentage (%) |
|-----------------------------|-----------------|----------------|
| Pain                        |                 |                |
| Severe                      | 13              | 7.78           |
| Mild                        | 87              | 52.09          |
| Moderate                    | 73              | 43.71          |
| Continuous                  | 20              | 11.98          |
| Precipitated by certain food| 93              | 55.69          |
| Deceased after meals        | 47              | 28.14          |
| Nausea and Vomiting         | 69              | 41.32          |
| Loss of appetite            | 87              | 52.09          |
| Weight loss                 | 43              | 25.75          |
| Indigestion                 | 59              | 35.33          |
| Bloating                    | 39              | 23.35          |
| Chest pain                  | 24              | 14.37          |
| Spicy Food                  | 93              | 55.69          |
| Smoking                     | 57              | 34.13          |
| Alcohol drinking            | 21              | 12.57          |
| Stress                      | 31              | 18.56          |
| Prolonged use of NSAID      | 27              | 16.17          |
| Other drugs                 | 11              | 6.59           |

IV. DISCUSSION

This cross-sectional observation study included 200 individuals aimed to determine the prevalence of PUD among patients attending BMCH and to identify the socio-demographic factors to estimate their relative impact on the ulcer incidence. In our study the prevalence of gastric and duodenal ulcer was 54.50% and 29% respectively. Our findings are higher than Groenen et al. where they diagnosed 2.4% gastric ulcer and 3.5% duodenal ulcer [7]. Another study conducted in Iran mentioned opposite results in comparison to ours where they had majority participants (50) suffering from duodenal ulcer than gastric ulcer (33), making an overall prevalence of 8.20% [8]. Regarding symptoms and sign 52.09% reported loss of appetite followed by nausea and vomiting 41.32% and indigestion 35.33%. Another study conducted in USA found that abdominal pain (51.4%) was the most prevalent symptom among their PUD patients followed by dyspepsia (37.6%), features of irritable bowel syndrome (29.6%) and epigastric pain (20.9%) [9]. Regarding consideration of risk factors for PUD spicy food intake came in first place (55.69%) followed by smoking (34.13%), stress (18.56%) and prolonged use of NSAID (16.17%). One study conducted in Zambia mentioned that majority of their PUD patients were regular alcohol drinkers (57%), followed by 40% had prolonged history of using NSAID and 34% were smokers [10]. An Iranian study revealed their main risk factors for gastric ulcer were H. 14
pylori infection (2.1%), prolonged NSAIDs use (1.3%) and smoking (1.1%) [8].

In our study the highest positive results were in the age group of 41-50 years (32.34%). However, there were no statistically significant differences between the age groups. This finding does not correlate with similar studies conducted in developed countries where they pointed that the infection begins in younger age and increasing yearly with age. This is probably due to limited numbers of elderly participants. A study in Brazil mentioned the prevalence of PUD was of 84.7% in subjects 18 to 30 years of age, increasing to 92% in subjects 46-60 years old, while in subject above 60 years old, the prevalence decreased slightly. As a whole, the prevalence of PUD did not increase significantly (P=0.147) with age [11].

Our study has some limitations as the information concerning proton pump inhibitors, concomitant antibiotics use and the presence of H. pylori infection were not available. To clarify these factors properly a prospective study needed to be performed.

V. CONCLUSION

Population – based endoscopies are recommended to detect PUD at its earliest stage and prevent its dreadful complications. Health education campaigns should be performed to educate the people regarding the nature of PUD and its risk factors to promote well-being.

VI. LIMITATIONS:

As the current study has done in a tertiary care teaching hospital in the urban area, hence the results may not be the complete reflection of the PUD patients residing in the whole community. More studies need to be contemplated to come to a complete conclusion for this. Moreover, only selected variables of interest have taken here for observation.

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