Frequency of Bleeding Duodenal Ulcer in Patients present with Upper Gastrointestinal Bleeding

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INTRODUCTION

Bleeding from the upper gastrointestinal tract is a communal symptom in medical institutions and gastroenterology clinics [1]. It has multiple causes that varies greatly in different geographic regions of the world [2]. Despite developments in treatment, upper gastrointestinal bleeding secondary to peptic ulcer remains a serious medical risk with significant mortality, morbidity and healthcare costs. The peptic ulcer disease is assumed to be reduced due to improvements in endoscopic techniques, decreased Helicobacter pylori incidence and an increased use of acid-inhibiting drugs. However, advances in peptic ulcer treatment have not necessarily reduced the number of hospitalizations for upper gastrointestinal bleeding following peptic ulcer disease or the risk of adverse events, counting mortality. Conflicts in previous studies results can be clarified by various factors. Gastric ulcer epidemiology has evolved and is no longer driven by H. pylori. An aging population has increased use of non-steroidal anti-inflammatory drugs (NSAIDs), counting aspirin. This results in more frequent...
bleeding from the upper gastrointestinal tract following peptic ulcer disease in the elderly people. The utmost communal symptoms are bloody vomiting in acute bleeding and melena in cases which were chronic. It has been observed that duodenal ulcer is common in cirrhosis patients than in the over-all population [3]. In previous years, most bleeding in patients with cirrhosis was attributed to esophageal varices [4]. The widespread use of upper gastrointestinal endoscopy has shown that in many cases it can cause erosions, gastritis, or other injuries such as peptic ulcers, especially duodenal ulcers [5]. The prevalence of upper gastrointestinal bleeding ranges from 48-160 patients per 100,000 people, with consistent reports of higher incidence among elderly and men [6]. The acute upper gastrointestinal bleeding most communal reason is not varicose veins, and bleeding from peptic ulcer (PIU) accounts for 28% to 59% of cases [7]. Most peptic ulcer disease patients are successfully treated by H. pylori infection treatment and / or using suitable antisecretory therapy and avoiding NSAIDs usage [8]. In USA, triple therapy based on proton pump inhibitors (PPIs) is the recommended primary treatment for H. pylori infection. Peptic ulcers are defects in the lining of the duodenum or stomach that cover along the mucosal membrane [9]. The gastric and duodenal epithelial cells secrete mucus as a consequence of the cholinergic stimulation and epithelial lining irritation. The superficial part of the duodenal and gastric mucosa is in the gel layer form that is not-permeable to pepsin and acids. Other cells in the stomach and duodenum secrete bicarbonate, which helps buffer the acid near the mucosa [10]. Type E prostaglandins (PGEs) play a vital protective part as PGEs increase the secretion of both mucosal layer and bicarbonate [11]. The aim of the study was to govern the incidence of duodenal ulcer bleeding in patients admitted to the tertiary care hospital with bleeding from the upper gastrointestinal tract in order to determine the morbidity and mortality associated with duodenal ulcer in our local population. No comparable analysis has been performed at our facility in the previous 5-years, this analysis will provide the most up-to-date and latest information on the frequency of duodenal ulcer bleeding in upper GI bleeding patients. This study outcomes will be beneficial for other healthcare professionals and can be the reference for further studies.

METHO D S

270 total patients of both sexes, 20 to 70 years of age, selected by sequential sampling of improbable samples with bleeding from the upper gastrointestinal tract within 24 hours of symptom onset, were registered in the study. A comprehensive interview and complete physical assessment were performed. Inclusion Criteria: All patients reporting upper gastrointestinal bleeding reporting within 24 hours of symptom onset. Patients aged 20-70, Patients of both sexes. Exclusion criteria: Patients with severe shock (BP 90/160), patients with coagulation disorders, recent myocardial infarction, severe respiratory disease, arrhythmias or unstable angina were omitted from the study. Hospital ethics committee approval and approval from CPSP REU department were obtained. A detailed interview and complete physical examination were performed. Endoscopic examination protocols were followed. Compulsory baseline tests, including complete blood count, were obtained: occult blood faeces, eggs / cysts; bleeding profile; hepatitis serology; ECG, abdominal ultrasound, X-ray chest at admission before the procedure. Patients were registered for endoscopic evaluation of the upper gastrointestinal tract after obtaining informed consent. Upper gastrointestinal endoscopy was accomplished within 48-hrs of the start of symptoms as bleeding. Local anesthesia of the throat was provided with a 4% xylocaine spray. The entire procedure was performed under the supervision of a gastroenterologist with at least five years of experience. All of the above information, including age, sex and duodenal ulcer, was documented in a formerly designed proforma. The data were analyzed and entered in SPSS 22.0. Means and S.D were calculated for quantitative variables such as size of the lesion and age. The frequency and percentages were calculated by gender and bleeding duodenal ulcer. Duodenal ulcer was graded with gender and age to determine the effect modification. The chi-square test was used after stratification, considering the P value <0.05 as significant. All results are presented in graphs and tables.

R E S U L T S

The study was conducted on 270 patients at the Department of Gastroenterology at MTI-Lady Reading Hospital in Peshawar. The results are given below: - Mean and SD for age were 54.5 ± 10.54. 110 (40.74%) patients were 20-45 years old and 160 (59.26%) patients were 46-70 years old. 190 (70.37%) patients were male and 80 (29.62%) females. (Table 1).

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Frequency (%)</th>
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<tbody>
<tr>
<td>20-45 Years</td>
<td>110 (40.74%)</td>
</tr>
<tr>
<td>46-70 Years</td>
<td>160 (59.26%)</td>
</tr>
<tr>
<td>Total</td>
<td>270 (100%)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>190 (70.37%)</td>
</tr>
<tr>
<td>Female</td>
<td>80 (29.62%)</td>
</tr>
<tr>
<td>Total</td>
<td>270 (100%)</td>
</tr>
</tbody>
</table>

| Mean age    | 54.5 ± 10.54 SDs |

Table 1: Shows the patients demographic features (n=270)
While in this study duodenal ulcer was registered in 64 (23.70%) patients, 206 (76.29%) patients did not have duodenal ulcer. 

<table>
<thead>
<tr>
<th>Duodenal Ulcer</th>
<th>Frequency (%)</th>
<th>P Value</th>
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<tbody>
<tr>
<td>Yes</td>
<td>64 (23.70%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>206 (76.29%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>270 (100%)</td>
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</tbody>
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Table 2: Frequency and Percentages for Duodenal Ulcer (n=270)

Age and Gender were controlled through stratification and therefore can be seen at Table 3 and 4 respectively. Table 3 shows the incidence of duodenal ulcer with respect to the age; 14 (5.18%) subjects out of 110 were found positive for duodenal ulcer in 20-45 years of age while 55 (19.25%) patients out of 160 have duodenal ulcer in 20-45 years of age patients.

Table 3: Stratification of Duodenal Ulcer with Age (N=270)

Table 4 shows the incidence of duodenal ulcer with respect to the gender; 39 (14.44%) male subjects out of 190 were found positive for duodenal ulcer while 25 (9.25%) female patients out of 80 have duodenal ulcer.

Table 4: Stratification of Duodenal Ulcer with Gender (N=270)

**Discussion**

Bleeding from the upper gastrointestinal tract is a communal symptom in medical institutions and gastroenterology clinics. It has multiple causes that varies greatly in different geographic regions of the world. The utmost communal symptoms are bloody vomiting in acute bleeding and melena in cases which were chronic. In this study, the mean age and SD were 54.5 ± 10.54, 110 (40.74%) patients were 20-45 years old and 80 (29.62%) females. While in this study duodenal ulcer was registered in 64 (23.70%) patients, 206 (76.29%) patients did not have duodenal ulcer. Of these ulcers, 45 (6.5%) were graded as Forrest I and Forrest II was seen in 113 (16.2%) cases. Gastric ulcer was identified in 488 cases (2.5%), and symptoms of bleeding were observed in 61 cases (12.3%) in Fallah et al., study [14]. Compared to this study, where the mean age and SD was 54.5 ± 10.54, 19 patients (3.9%) have Forrest 1 grading and 41 patients (8.4%) had Forrest 2. The gastric ulcers incidence remained stable over time, while the duodenal ulcers incidence decreased [15, 16]. It has been observed that duodenal ulcer is common in cirrhosis patients than in the over-all population. In previous years, most bleeding in patients with cirrhosis was attributed to esophageal varices. The widespread use of upper gastrointestinal endoscopy has shown that in many cases it can cause erosions, gastritis, or other injuries such as peptic ulcers, especially duodenal ulcers. The prevalence of upper gastrointestinal bleeding ranges from 48-160 patients per 100,000 people, with consistent reports of higher incidence among elderly and men. The acute upper gastrointestinal bleeding most communal reason is not varicose veins, and bleeding from peptic ulcer accounts for 28% to 59% of cases. Most peptic ulcer disease patients are successfully treated by H. pylori infection treatment and / or using suitable antisecretory therapy and avoiding NSAIDs usage. In USA, triple therapy based on proton pump inhibitors (PPIs) is the recommended primary treatment for H. pylori infection [17, 18]. In this study, patients with bleeding duodenal ulcers had a worse prognosis than patients with bleeding gastric ulcers. Duodenal ulcers were associated with increased mortality, surgery, and admission rates [19, 20]. Bleeding from duodenal ulcers has been related with an augmented risk of mortality and surgery in some, but not all as shown in previous studies [21, 22]. Duodenal ulcers may be associated with a poorer prognosis as duodenal ulcers may be technically more difficult to manage; especially in the case of endoscopy performed in rural areas with little experience in the treatment of upper gastrointestinal bleeding secondary to peptic ulcer disease [6, 23].

**Conclusions**

Upper gastrointestinal bleeding is secondary to duodenal ulcers due to an increase in early readmissions over time, as observed in this local population, resulting in a higher incidence of duodenal ulcers in our local population. The limitation of this study was the six-month period, which was too short to meaningfully assess the time trends in our local population.

**Conflicts of Interest**

The authors declare no conflict of interest.
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