Govaresh/ Vol. 21, No.4, Winter 2017; 260-265.

Original Article

Endoscopic Findings in Patients with Upper Gastrointestinal Bleeding Referred to Taleghani Hospital, Tehran, Iran

Afsaneh Sharifian[1], Esmaeil Tavakoli[2], Sara Ashtari[3*], Mohammad Reza Zali[4]

[1] Associate Professor, Basic and Molecular Epidemiology of Gastrointestinal Disorders Research Center, Research Institute for Gastroenterology and Liver Diseases, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

[2] Researcher, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

[3] Master of Epidemiology, Gastroenterology and Liver Diseases Research Center, Research Institute for Gastroenterology and Liver Diseases, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

[4] Professor, Gastroenterology and Liver Diseases Research Center, Research Institute for Gastroenterology and Liver Diseases, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

ABSTRACT

Background:
Upper gastrointestinal bleeding (UGIB) remains a common medical problem worldwide. It is an emergency medical condition, which may require hospital admission. UGIB also increases the risk of morbidity, and mortality and uses health care resources. The aim of this study was to determine the endoscopic findings and their frequencies in patients with UGIB with regard to age in Tehran's Taleghani Hospital.

Materials and Methods:
The medical records and endoscopy reports of 990 patients, who underwent endoscopy for UGIB in Tehran's Taleghani Hospital over a period of 2 years from 2010 to 2012, were retrospectively analyzed.

Results:
A total of 990 patients consisted of 594 (60%) men and 396 (40%) women had endoscopy for UGIB. Mean (±SD) age of the patients was 54 (±17.2) years. The commonest (45.5%) cause of UGIB was peptic ulcer disease, which included; duodenal ulcer (26.4%), gastric ulcer (19.1%), followed by esophageal and gastric varices (19.5%). Malignant conditions (cancers) contributed to 14.7%, which included gastric cancer (7.2%), esophageal cancer (5.5%), and duodenal cancer (2%). Other less frequent causes of UGIB were esophageal ulcer (6.7%), erosive gastritis (6.3%), Mallory-Weiss syndrome (5.4%), and Dieulafoy's lesion (1.2%). Normal endoscopic findings were recorded in 0.7% of the patients with UGIB.

Conclusion:
Peptic ulcer diseases are the commonest cause of UGIB followed by esophageal and gastric varices.

Keywords: Upper gastrointestinal bleeding, Endoscopy, Iran

please cite this paper as:
Sharifian A, Tavakoli E, Ashtari S, Zali MR. Endoscopic Findings in Patients with Upper Gastrointestinal Bleeding Referred to Taleghani Hospital, Tehran, Iran. *Govaresh* 2017;21:260-265.

Corresponding author:
Sara Ashtari, M.Sc. of Epidemiology
Research Center of Gastroenterology and Liver Diseases, Shahid Beheshti University of Medical Sciences, Taleghani Hospital, Tabnak St, Yaman Ave, Velenjak, Tehran, Iran.
Tel: + 98 21 22432515
Fax: + 98 21 22432517
E-mail: sara_ashtari@yahoo.com

Received: 5 Sep. 2016
Edited: 5 Dec. 2016
Accepted: 6 Dec. 2016

INTRODUCTION

Upper gastrointestinal bleeding (UGIB) is a major emergency medical condition, which may require hospital admission. It is associated with significant morbidity, mortality, and health care resource utilization (1, 2). Based on some reports the annual incidence of UGIB varies from 50 to 150 hospital admissions per 100,000 populations in a year, which is almost 1% of all emergency room admissions (3-5). Bleeding from upper gastrointestinal tract is approximately 4 times as common as bleeding from the lower gastrointestinal tract with mortality rates as high as 6-10% overall (6,7). Mortality

from UGIB has remained constant over the past decades despite the improvement in the diagnosis and management of acute cases. The cause maybe an aging population and comorbidities (8,9). UGIB is more common in men than women and increases with age (10,11). Based on Iranian studies, 57-76% of UGIB cases occurred in male patients (12-14).

MATERIALS AND METHODS

This was a descriptive study of consecutive patients who underwent upper gastrointestinal (GI) endoscopy for UGIB in the endoscopy unit of Tehran's Taleghani Hospital, affiliated to Shahid Beheshti University of Medical Sciences in Iran. All data for this cross-sectional study were collected from medical records and endoscopic reports of 990 patients with UGIB who were admitted to the GI Department of this hospital over a period of 2 years from 2010 to 2012. We examined the hospital records and endoscopy reports of 990 patients who underwent endoscopy for UGIB. All the patients underwent upper endoscopies to determine the etiology of UGIB. Data were collected by check list from the medical and endoscopy reports. The obtained data included sociodemographic data (age, sex), cause of diseases, clinical presentation, history of UGIB, and endoscopic findings. The patients were divided into four age groups (>30, 30-50, 50-70, and >70 years).

Endoscopic evaluation of the bleeding lesion in the case of peptic ulcer was defined according to the Forrest classification system as follows: FI (FIa and FIb), FII (FIIa, FIIb, and FIIc), and FIII (21). The patients who had a variceal type of UGIB were classified according to the severity of varices into four grades (i.e., grades I–IV) (22). The grade assigned to each patient was based on the highest grade observed in him/her. Gastric extension of the esophageal varices were classified using Sarin's classification into Type 1 gastroesophageal varices (GOV-1) or Type 2 gastroesophageal varices (GOV-2), while Type 1and 2 isolated gastric varices were classified as IGV-1 and IGV-2. Endoscopic diagnosis was considered to be accurate if stigmata of active or recent bleeding were present, independently of the nature of the bleeding lesion. Normal examination was defined as the absence of any endoscopic abnormality.

Statistical Analysis

Data were entered and analyzed using statistical package for social sciences (SPSS) software for windows version 21 (SPSS Inc., Chicago, IL, USA). Descriptive statistics and frequency distribution such as mean, standard deviation and percentage were employed. Means±standard deviations (SD), medians, and ranges were calculated for continuous variables, whereas proportions and frequency tables were used to summarize categorical variables. Continuous variables were also categorized.

Table 1: Frequency of patients in different age groups

Age groups (year)	Number of patients (٪)
<30	138 (14)
30-50	279 (28.2)
50-70	354 (35.7)
>70	219 (22.1)

RESULT

A total of 990 patients underwent upper GI endoscopy during the 2-year period from 2010 to 2012. Out of the all patients who underwent endoscopy because of UGIB 594 (60%) patients were men and 396 (40%) patients were women with the mean (±) age of 54 (±17.2) years. The male to female ratio was 2:1. The age range of the patients was 15-95 years. The age range was further categorized into four groups; <30, 30-50, 50-70, and >70 years. The number of patients was more in the age group of 50-70 years (table 1).

The commonest cause of UGIB according to the endoscopic findings was peptic ulcer disease (45.5%), which included duodenal (26.4%) and gastric ulcers (19.1%), followed by esophageal and gastric varices (19.5%). Malignant conditions (14.7%) consisted of gastric, esophageal, and duodenal cancers were 7.2%, 5.5% and 2% respectively. Other less frequent causes of UGIB were esophageal ulcer (6.7%), erosive gastritis (6.3%), Mallory-Weiss syndrome (5.4%), and Dieulafoy's lesion (1.2%). Normal endoscopic findings were recorded in 0.7% of the patients with UGIB (table 2).

Assessment of the frequency of endoscopic findings with regard to age showed that duodenal ulcer was the most common cause of UGIB in <30, 30-50, and 50-70 years old patients but in patients over 70 years old, gastric ulcer was more common. The second cause of UGIB, with almost equal frequency in each age group was esophageal and gastric varices (table 3).

DISCUSSION

In this study, we examined the endoscopic findings

Table 2: Frequency of endoscopic findings in patients with UGIB (n=990)

Endoscopic findings		Number (٪)	Total (٪)
Peptic Ulcer disease	Duodenal ulcer	262 (26.4)	451 (45.5)
	Gastric ulcer	189 (19.1)	
Esophageal & Gastric varices		193 (19.5)	
Cancers	Gastric cancer	71 (7.2)	146 (14.7)
	Esophageal cancer	55 (5.5)	
	Duodenal cancer	20 (2.0)	
Esophageal ulcer		66 (6.7)	
Erosive gastritis		62 (6.3)	
Mallory-Weiss syndrome		53 (5.4)	
Dieulafoy's lesion		12 (1.2)	
Normal		7 (0.7)	

Table 3: Distribution of endoscopic findings and its frequency with age

Endoscopic findings	<30	30-50	50-70	>70	Total
Duodenal ulcer	52 (37.7)	97 (34.7)	77 (21.7)	36 (16.4)	262 (26.4)
Gastric ulcer	19 (13.7)	52 (18.6)	71 (20.0)	47 (21.4)	189 (19.1)
Esophageal ulcer	15 (10.8)	9 (3.2)	19 (5.3)	23 (10.5)	66 (6.7)
Esophageal & gastric varices	26 (18.8)	52 (18.6)	77 (21.7)	38 (17.3)	193 (19.5)
Gastric cancer	4 (2.9)	23 (8.2)	23 (6.5)	21 (9.5)	71 (7.2)
Esophageal cancer	7 (5.1)	8 (2.8)	23 (6.5)	17 (7.7)	55 (5.5)
Duodenal cancer	0 (0)	2 (0.7)	7 (2.0)	11 (5.0)	20 (2.0)
Erosive gastritis	0 (0)	13 (4.6)	32 (9.0)	17 (7.7)	62 (6.3)
Mallory-Weiss syndrome	13 (9.4)	19 (6.8)	17 (4.8)	4 (1.8)	53 (5.4)
Dieulafoy's lesion	2 (1.4)	4 (1.4)	4 (1.1)	2 (0.9)	12 (1.2)
Normal	0 (0)	0 (0)	4 (1.1)	3 (1.3)	7 (0.7)
Total	138 (100)	279 (100)	354 (100)	219 (100)	990 (100)

of patients with UGIB. Peptic ulcer diseases were the commonest cause of UGIB accounting for 45.5% of all the patients in this study. This is similar to many reported studies (23-26). Based on the endoscopic findings in this study duodenal ulcer occurred more frequently (26.4%) than gastric ulcer (19.1%). In most of Iranian studies on patients with UGIB, duodenal ulcers (19.5-41%) have been reported to be more common than gastric ulcers (10.8-29.5%), that is completely similar to our findings (13, 17, 27-29). In contrast, other studies (in developing countries) reported esophageal and gastric varices as the major cause of UGIB (7, 30-32). Adam and colleagues in a study done at Pakistan Institute of Medical Sciences found that esophageal varices were responsible for bleeding in 44.4% of cases and peptic ulcer accounted for only 19.7% of UGIB cases (33). Another study in Uganda by Alema and co-workers showed that esophageal varices were responsible for 40.6% of UGIB and peptic ulcer was only accounted for 6.2% of UGIB cases (7). The most common cause of peptic ulcer diseases are *Helicobacter pylori (H. pylori)* infection and NASIDs uses (1,15,34-37). According to other studies 53-57% of patients with duodenal and gastric ulcer bleeding have history of aspirin or other NASID uses and 45-50% of them are infected by *H. pylori* (38). But currently, because of the

decreasing trend of *H. pylori* infection in our country (34, 39) we expect a change in the prevalence and etiology of UGIB.

Esophageal and gastric varices were the second commonest cause of UGIB in our study, accounting for 19.5% of all patients. In Iranian studies, 2-11.7% of the causes for UGIB have been attributed to varices. In one study from Shiraz 27% of UGIB were from varices (28, 29, 40, 41). Most bleeding varices are in the esophageal lumen, however they may be located in the fundus and cardia of the stomach, distal stomach, duodenum, and small bowel or colonic segments (17).

Malignant function and benign tumor (cancers), was the third commonest cause in this study, esophageal and duodenal caner with 5.5% and 2% respectively were the most common malignant function and benign tumor. But in other studies in Iran, less than 2-8% of sever UGIB have been reported to be resulted from malignant and benign tumors of the upper GI tract (42, 43).

Other less common causes were esophageal ulcer (6.7%), erosive gastritis (6.3%), Mallory-Weiss syndrome (5.4%), and Dieulafoy's lesion (1.2%). As reported in Iranian studies of UGIB a total of 16-25% of patients have erosive gastritis (12,13,34), but in this study only 6.3% had erosive gastritis. Based on previous studies, Mallory-Weiss syndrome accounts for 2.5-8% of all UGIB (12, 17, 29), and Dieulafoy's lesion accounts for 1-2% of UGIB (44, 45), that is completely similar to our findings. No source of bleeding was found in 0.7% of the patients by standard endoscopy. This means that UGIB has been shown to arise from a variety of sources, few of which are apparent on endoscopic studies.

The limitation of our study is that it was a hospital-based study. It is well known that hospital-based studies may include only selected patients and the data may be less reliable, making standardization and comparison of data impossible. Despite this limitation, it is possible to obtain some valuable information about the epidemiology and etiology of UGIB in Iran. It is very valuable because until recently, only limited data was available about the epidemiology of UGBI in Iran and most studies investigated UGBI over short time periods in small populations.

CONCLUSION

Peptic ulcer diseases are the commonest cause of UGIB in Iran, probably due to the high endemic of *H. pylori* and NASID use. And the second cause of UGIB is esophageal and gastric varices. Considering the frequency of endoscopic findings with regard to age showed that duodenal ulcer was the most common cause of UGIB in <30, 30-50, and 50-70 years old patients but in patients over 70 years old, gastric ulcer was more common followed by esophageal and gastric varices (17.3%).

ACKNOWLEDGMENTS

This project was completely supported and funded by Gastroenterology and Liver Diseases Research Center, Research Institute for Gastroenterology and Liver Diseases, Shahid Beheshti University of Medical Sciences.

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