ORIGINAL ARTICLE

ETIOLOGICAL PATTERN AND OUTCOME OF NON-VARICEAL UPPER G.I. BLEEDING

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ABSTRACT

Background: Upper GI bleeding is one of the most frequently encountered emergencies worldwide. This study was designed to analyze the diagnostic accuracy of upper GI endoscopy, to explore the etiology of upper GI bleeding where the causes are other than varices and to evaluate the clinical outcome in terms of efficacy of treatment and prognosis.

Material & Methods: This was a descriptive study, which was conducted at Military Hospital Rawalpindi, in which a total of 198 patients with Non-variceal Upper GI bleeding were included. After initial resuscitation, endoscopy was performed within 48 hours of presentation. The study was designed to assess the etiological pattern of non-variceal upper GI bleeding and clinical outcome.

Results: 158 (80%) patients were male, with male to female ratio of 4:1 and a mean age 49.6 (S.D. 13.9) years. A bleeding site could be detected in all patients. 72% patients presented with hematemesis alone, whereas melena was reported in 22% patients and concomitant hematemesis with melena were the presenting manifestations in 6% patients. Previous history of NSAIDs intake was obtained in 44% of patients. Major causes of Non-variceal upper GI bleeding were peptic ulcer (34%), gastric erosions (32%), malignancy (8%), and reflux esophagitis (8%). The majority of patients (80%) had potentially curable disease and recovered when reevaluated. Emergency surgery was seldom necessary and no mortality was reported.

Conclusion: UGI endoscopy proved an appropriate diagnostic tool and provided a good knowledge about the etiological pattern of non-variceal upper GI bleeding. Non-variceal causes contributed to the morbidity predominantly.

KEY WORDS: Nonvariceal; GI bleeding; Endoscopy.

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INTRODUCTION

Upper Gastrointestinal (GI) bleeding commonly presents with hematemesis (vomiting of blood or coffee-ground like material) and/or melena. Upper GI bleeding can be classified into several broad categories depending upon anatomic and pathophysiologic factors.[1] Acute upper GI bleeding is considered as a major complication the upper GI tract. Although a large number of admissions to military hospital are attributed to upper GI bleeding, epidemiological surveys are still limited, what renders data imprecise. It accounts for over 350,000 hospitalizations in one year in USA, with mortality rate of 10%. It is twice as common in males as in females, and it increases with age.[1,2] Nonvariceal upper GI bleeding is a common medical condition that results in significant patient morbidity, mortality and medical care costs.

Peptic ulcer disease remains a common cause of Upper GI bleeding when we consider the causes other than esophageal and gastric varices.[3] It accounts for about half of cases of nonvariceal upper GI bleeding with overall mortality rate of 6-7%.[10] More recent data suggest that the proportion of cases caused by peptic ulcer disease has declined.[1] Nonsteroidal anti-inflammatory drugs (NSAIDs) use remains the most common secondary cause of serious dose dependent upper G I bleeding especially in presence of risk factors like advancing age and concomitant use of other drugs.[4] Helicobacter pylori infection and Stress related ulcers can cause significant acute upper GI bleeding. Reduction or elimination of these risk factors reduces ulcer recurrence and re-bleeding rates. H. pylori eradication should be attempted for all patients who are diagnosed with

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the infection and who have peptic ulcer to prevent ulcer recurrence and re-bleeding.[5] In the majority of patients, the bleeding stops spontaneously and most will not re-bleed during hospitalization. However, subgroups of patients with severe Upper GI bleeding are at high risk for recurrent hemorrhage.[6]

Mallory-Weiss tears are also a recognized cause of upper GI bleeding, but the blood loss is usually small and self-limiting. However, massive hemorrhage requiring transfusions and even death can occur.[4] Neoplasms of the Upper GI tract, Portal hypertensive gastropathy and Gastric antral vascular are the rare causes of significant Upper GI bleeding.[7]

In the last 30 years, the endoscopy has become the method of choice in the diagnostic approach of upper GI bleeding and the prevention of re-bleeding. It has now advanced from a purely diagnostic procedure to first line of therapy for bleeding peptic ulcers.1,8 It should be performed by an experienced doctor in well-equipped setup, as early as patient is stabilized, preferably in 24-48 hours.[8]

This study was designed to analyze the diagnostic accuracy of upper GI endoscopy, to explore the etiology of upper GI bleeding where the causes are other than varices and to evaluate the clinical outcome in terms of efficacy of treatment and prognosis.

MATERIAL AND METHODS

This descriptive study of 198 patients was conducted at Endoscopy Department, Military Hospital, Rawalpindi. Patients selected by non-probability purposive sampling technique were screened for enrollment in the study, after the informed consent. Patients having esophageal or gastric varices on previous or present endoscopy and other severe comorbid conditions (CKD, metastatic malignancy, severe cardiac failure and septicemia) were not included, as they were difficult to be followed up. Hemodynamically unstable patients were resuscitated after initial evaluation. Data were collected by a detailed history, clinical examination and necessary laboratory investigations. Upper GI endoscopy was performed as early as the patients were hemodynamically stable, preferably within 48 hours of presentation. Cases were selected for study on the basis of endoscopic findings. Endoscopic diagnosis was considered to be accurate, if stigmata of active or recent bleeding were present, independently of the nature of the bleeding lesion. Patient were managed as indoor cases and later on discharged on appropriate treatment. Patients were reevaluated after 4 weeks for review endoscopy to assess the outcome of management, in terms of potentially curable disease, chronicity and mortality, if any.

The compiled data was analyzed by using statistical package for social sciences (SPSS) version 17.0. Mean, standard deviation, was calculated for age. Frequencies and percentages were presented for all categorical variables including sex, presentation, previous history and socioeconomic factors.

RESULTS

A total of 430 patients had presented with upper GI bleeding and only 198 were selected for this study. About 54% patients were excluded on the basis of finding of varices on upper GI endoscopy and previous history of variceal bleeding. Among these 80% patients (n=158) were male having male to female ratio of 4:1 which is explained by male predominant military population. Age varied from 26 to 75 years, with a mean age of 49.6±13.9 years. Majority (76%) of patients were less than 60 years of age, which is due to younger and middle age group of serving soldiers. Hematemesis alone was reported in 72% of patients (n=142), melena was reported in 22% of patients (n=44), whereas both were initial manifestations of 6% patients (n=12). Previous history of peptic ulcers was found in16% patients (n=30). Use of nonsteroidal anti-inflammatory drugs (NSAIDs) was reported in 44% patients (n=87). Remaining 40% patients (n=80) had no known risk factors. Endoscopy was performed and the bleeding site could be detected in all patients. Peptic ulcer was the most frequent cause (34%), out of which, 52 patients had duodenal and 16 had gastric ulcers. Gastric erosions were found in 32% patients. Malignancy and reflux esophagitis was found in 8.00% each, esophageal ulcer in 5%, esophageal candidiasis in 4%, Mallory Weiss tears and portal gastropathy in 3% each, esophageal carcinoma in 2% and telangiectasia in 1% patient. (Table-1)

After initial resuscitation and management, all patients were subjected to specific treatment, according to the findings of upper GI Endoscopy. (Fig. 1) The majority of patients (79%) had potentially curable disease and were subject to specific treatment as described in Fig. 1 and recovered when followed up after 4 weeks. 11% patients with chronic diseases (Reflux Esophagitis and Portal Gastropathy) were advised long treatment and follow up. Only 2 patients (1%) having duodenal telangiectasia underwent banding.10% patients had malignancies, who were referred to specialized centers for other treatment options like chemotherapy, radiotherapy and surgery. (Fig. 2)

No deaths attributable to upper GI bleeding were recorded. However few cases having malignancies were unlucky to have an expected bad prognosis. No emergency surgery was carried out; however elective surgery was advised in patients having malignancy.

Table 1: Endoscopic diagnosis.

No.	Diagnosis	Frequency	Percentage
1	Peptic Ulcer	68	34
2	Erosive Gastritis	63	32
3	Gastric Carcinoma	16	8
4	Reflux Esophagitis	16	8
5	Esophageal Ulcers	10	5
6	Mallory-Weis Tears	8	4
7	Esophageal Candidiasis	6	3
8	Portal Gastropathy	5	3
9	Esophageal Carcinoma	3	2
10	Duodenal Telangiectasia	2	1

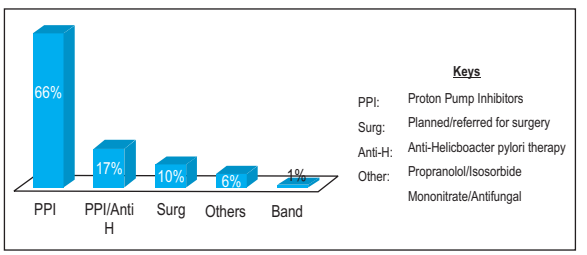

Figure 1: Treatment

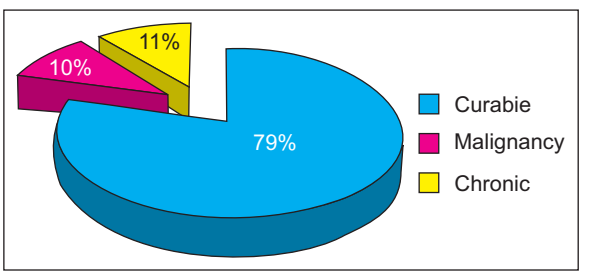

Figure 2: Outcome on review endoscopy.

DISCUSSION

Acute upper GI bleeding is a common life-threatening. Despite the emergency endoscopy and endoscopic therapy, the accessibility of the patients to medical centers with experienced medical staff and adequate equipment is still limited in Pakistan. Moreover, it is possible that many patients never reach the facility, while others may be admitted late in the course of the bleeding episode. Comparisons with previous studies conducted in other countries may be confounded by variations in methodology, definitions, entry criteria used and by the heterogeneity of the different groups of population.

In this study, higher male to female ratio of 4:1 was found, when compared with other studies.[7,9-11,21] The mean age at presentation is similar to other studies conducted in Pakistan,[9,12] and also abroad[13], but is relatively younger than another study in which the mean age is 66 years.[10] Both variables (gender and age) might be explained by the predominant male and younger population of military. Hematemesis is main presentation which can be explained by the fact that acute presentation with hematemesis creates more agony and fear of serious illness and grave consequences. The use of NSAIDs is a well-established risk factor for upper GI bleeding; in this, 44% patients with previous history of NSAIDs use, which is lower than that reported by others.[4,14,15] Previous history of peptic ulcer disease was also somewhat lower (16%) than that reported by others.[15,16] It might be difficult to interpret the relevance of this latter finding because information about previous diseases also depends on the accessibility of the patients to the local health care system. It is possible that this finding actually represents distinct characteristics of the populations, or that a bias may have occurred.

Similar to other studies, nonvariceal upper GI bleeding is the most common cause of morbidity.[10,14,16,17] The most common bleeding lesion identified at upper GI endoscopy was peptic ulcer disease, duodenal ulcer being more common than gastric ulcer. Whereas in Pakistan the most common cause of bleeding is esophageal varices.[1,3,12] Since this study is primarily designed for non variceal causes, so such patients were excluded and consequently the frequency of remaining etiological pattern stands same.[12] Nevertheless, more patients with erosive gastritis (32% vs. 13%) were found, when compared to American study.[14] This can be explained by over the counter availability and irrational use of drug like NSAIDs and steroids. The prevalence of portal gastropathy is comparable to another study (2.50%),[18] whereas that of malignancy was comparatively higher (8.00% vs. 6.00%).[19] In 4% cases the cause of bleeding was Mallory Weis tears, which is similar to other study.[20,21] Bleeding due to vascular malformation was found in 2% cases, a rare cause as observed previously.[22]

As the prevalence of the infection by H. pylori is higher in developing countries, it would be interesting to evaluate its possible influence on the etiology of upper GI bleeding. However, the prevalence of the infection was not an objective in this study.

Regarding the treatment outcome, no mortality was recorded during the study period. This is because of the exclusion of group of patients presenting with bleeding secondary to esophageal varices and other severe comorbid conditions, as presence of co-morbidity is a well-known cause of increased mortality.[10] These variations observed in different studies may be a consequence of different

study population selection, a changing etiological pattern, different treatment strategies and advances in diagnostic and therapeutic endoscopy.

The accuracy of endoscopy as a diagnostic tool in this study was similar to that observed in other studies.[15,16] Different results concerning the sensitivity of the endoscopic examination could be attributed to different definitions used for the diagnosis of the bleeding lesion.[23] In addition the possibility of inter-observer variation suggests formulation of standardized criteria for stigmata of hemorrhage.[24] Moreover, different time intervals between the bleeding episode and the endoscopy are known to influence the endoscopic diagnosis. The presentation of the bleeding episode was also found to be correlated with the accuracy of the endoscopic diagnosis. Patients who presented with hematemesis were significantly more likely to obtain an early diagnosis than others with different presentations. Hematemesis is probably a most threatening event to patients that may contribute to an earlier seek for medical attention.

Endoscopic therapy is a well-established procedure in the management of GI bleeding and can be used as an effective tool for selected patients.[25] After appropriate and successful treatment, the majority of nonvariceal lesions do not re-bleed. It is likely however, that endoscopic re-treatment may be considered as an alternative means of reducing the need for emergency surgery without increasing significantly the morbidity and mortality rates.[25,26] Accessibility of the patients to the hospital could influence timely admission to the emergency unit and may also explain delays in clinical and endoscopic intervention.

Nevertheless, the etiological pattern of upper GI bleeding was similar to that observed by others. It is reflected in the setting of Military Hospital Rawalpindi, showing more male preponderance but with similar age distribution, the common presentation, endoscopic findings and treatment outcome.

CONCLUSION

Upper GI endoscopy could identify the bleeding site in all patients and has provided a valued knowledge about the etiological pattern of nonvariceal upper GI bleeding, proving an appropriate and effective diagnostic tool. Moreover, follow-up endoscopy provided plentiful data in terms of clinical outcome, with respect to effectiveness of available treatments. Peptic Ulceration remains the commonest amongst the nonvariceal causes of upper GI bleeding.

Regarding the prognosis, nonvariceal etiology of upper GI bleeding contributed predominantly to the morbidity, hence emphasizing the need for more multicenter trials for treatment options to curtail it. This further signifies the higher mortality related to esophageal varices and associated chronic liver disease, which is more prevalent in Pakistan.

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CONFLICT OF INTEREST
Authors declare no conflict of interest.
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None declared.

AUTHORS' CONTRIBUTION

Conception and Design:	MAH, MAD
Data collection, analysis and interpretation:	MAH, MAD
Manuscript writing:	MAH, JZC, SI