

Determinants and Outcome of Acute Upper Gastrointestinal Bleeding in Yemen

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Abstract

Background: Upper gastrointestinal bleeding is a major medical emergency and one of the most important indications for hospital admissions. The etiology varies in different parts of the world.

Objectives: The study aimed to determine the occurrence, the risk factors and outcome of acute upper gastrointestinal tract bleeding in Yemen.

Materials and Methods: This is a retrospective study. The medical records of all patients in four Yemeni hospitals within the last 4 years were reviewed, 18 years of age and older, admitted with upper gastrointestinal bleeding as indicated by coffee ground material or bright red blood in gastric aspirates or black, tarry stools in addition to demographic data.

Results: There were 350 cases of acute upper gastrointestinal bleeding admitted to the four hospitals within the last 4 years. The commonest causes of upper gastrointestinal bleeding in Yemen were oesophageal varices [90%], erosive gastritis [3.43%] and peptic ulcers 6% [DU: 3.43%, GU: 2.57%]; Duodenal ulcers, gastric ulcers and malignancy were not so common causes of acute upper GIT bleeding in comparison with oesophageal varices. Patients with variceal bleeding were younger and had a higher mortality rate than non-variceal bleeders.

Conclusion: The rate of upper GI bleeding in Yemeni patients is common with many significant causes. The most common causes were esophageal varices, peptic ulcer disease, gastric cancer and erosive gastritis.

Keywords: Determinants; Gastrointestinal bleeding; Esophageal varices; Yemen

Introduction:

Upper gastrointestinal (GI) bleeding is one of the most common, high risk emergency disorders in the Yemen. Almost nothing has been reported on actual prevalence of upper GI bleeding. Upper gastrointestinal hemorrhage is defined as bleeding in the gastrointestinal tract proximal to the ligament of Treitz and it is categorized into variceal and non variceal [1]. Upper gastrointestinal bleeding is a major medical emergency and one of the most important indications for hospital admission. The etiology of upper gastrointestinal bleeding varies in different parts of the world. In Egypt, it was estimated that esophageal varices develop in about 50-63% of patients with liver cirrhosis and portal hypertension [2,3].

Variceal bleeding was found to be the commonest cause of upper gastrointestinal haemorrhage in Egypt [3,4], while in the Yemen only a limited number of studies have been performed on upper gastrointestinal bleeding, and as the demographic characteristics of the population of Yemen are unique and distinct from western countries, a retrospective study conducted to determine the occurrence, etiology and the outcome of acute upper gastrointestinal bleeding among patients presenting by hematemesis and/or melena to emergency or to the endoscopy units at four hospitals in Yemen.

Upper GI bleeding has been the subject of many recent audits and other studies that have investigated short term mortality [5], and explored how it is affected by factors such as etiology, and outcome. Almost nothing has been reported about longer term prognosis following upper gastrointestinal bleeding [6]. Hospitalized occurrence for upper gastrointestinal bleeding from 1999 to 2007 records was conducted. It was recorded that; mortality was 36.7% overall,

compared with the general population, mortality was increased 27-fold during the first month after admission [7].

Advances in endoscopic techniques have rendered endoscopy as the first line of diagnostic and therapeutic interventions for patients with upper gastrointestinal bleeding [8,9].

A study was conducted in Yemen to present out analysis of common upper gastrointestinal disorders in gastroenterology unit at Al-Gamhouria Teaching Hospital in Aden. The medical records of patients subjected to endoscopy during the period of May 1998-December 2000 were reviewed. The data were analyzed according to sex, age, symptoms, and Endoscopic findings. Based on the indications, patients were classified into three groups. Epigastric pain and heartburn were the indications in 458 [84%], out of 544, patients; haematemesis were in 59 [11%], patients and dysphagia in 27 [5%] patients. Bleeding sites were identified in 55 out of 59 patients, the source of bleeding was oesophageal varices in 25 [45%] and duodenal ulcer in 20 [36%] patient, gastric erosions in [15%] and gastric tumors in [4%]. Dysphagia was due to peptic oesophagitis in 12 patients and 9 cases due to oesophagus tumor. In conclusion, our results differ from other reports in which oesophageal varices are the second cause of upper digestive bleeding, whereas peptic ulcers are the first cause. The procedure was safe and well tolerated and no complications related to endoscopy were encountered in any patients [10].

Materials and Methods

This study was conducted in Yemen within 4 years [2009-2012]. The records were taken from 4 secondary hospitals for patients coming with upper GIT bleeding [hematemesis and/or melena] to the emergency or to the endoscopy unit of the following hospitals; Al-Wehdah Teaching Hospital [Thamar Governorate], Police General Hospital [Sana'a], Seiyun General Hospital and Bin-Zailaa Hospital at Hadramout respectively.

The medical records of all patients who coming to the endoscopy units for the last four years, 18 years of age and older, who were admitted with acute upper gastrointestinal bleeding during the period between January 1, 2009 and December 31, 2012, as indicated by coffee ground material or bright red blood in gastric aspirates or black, tarry stools. It was conducted in four hospitals within the last 4 years were reviewed, were reviewed and the following data were obtained:

1. Demographic data [age, sex, and residency].
2. Endoscopic findings.
3. Number of blood units transfused.
4. The outcome of the acute episode [cessation of bleeding and/or death]

Diagnosis	No of patients	% of patients	Actively bleeding	% to bleeders (102)	% to total (350)
Varices	315	90	92	90.20	26.29
- Oesophageal	280	88.89	85	83.33	24.29
- Fundal/Gastric	35	11.11	7	6.86	2
Oesophagitis	105	30	-	-	-
Erosive gastritis	26	7.43	1	0.98	0.29

This study was conducted in the aforementioned hospitals, 350 patients presented by upper GIT bleeding were subjected to complete clinical evaluation, emergency upper gastrointestinal endoscopy and therapeutic interventions as indicated. Variceal bleeding was the most common, representing 90% followed by non-variceal causes [10%]. Oesophageal varices [EV] alone represented 80% of causes of variceal bleeding, while combined oesophageal and gastric varices represented 10% and no isolated gastric varices. Peptic ulcer and other gastric lesions were the most common causes of non variceal bleeding.

Results

There were a total of 350 patients who had sustained 400 episodes of acute upper gastrointestinal bleeding, follow up was done for occurrence of re-bleeding or mortality, during the last four years; There were 301 [86%] males and 49 [14%] females, aged 18 to 102 with a mean and median age of 33 and 29 years respectively [Table 1].

Age group	Male	Female
18-30	205	22
31-44	50	10
45-59	17	11
60-74	14	3
> 75	15	3

Table 1: Distribution of ages and sex of patients under study; Age range: 18-102; Mean: 33 years; Median: 29 years.

Endoscopic findings

250 cases at Al-Wehdah Teaching hospital, 60 cases at Police General Hospital, 15 cases at Seiyun General Hospital and 25 cases at Bin-Zailaa Hospital [Table 2].

Hospital	n [%]
Al-Wehdah Teaching hospital	250 [71.4%]
Police General Hospital	60 [17.2%]
Seiyun General Hospital	15 [4.3%]
Bin-Zailaa Hospital	25 [7.1%]

Table 2: Distribution of the cases among four hospitals.

PUD	21	6	5	4.90	1.43
- DU	12	57.14	3	2.94	0.86
- GU	9	42.86	2	1.96	0.57
Gastric malignancy	12	3.43	3	2.94	0.86
MWT	2	0.6	-	-	-
AVM	1	0.3	1	0.98	0.29

Table 3: Endoscopic diagnoses and numbers of patients with active bleeding at time of endoscopy. 1NB : There is overlap i.e. one patient might have more than one diagnosis. *AVM : Arteriovenous malformation.

Oesophageal varices (10% gastric varices) were the leading causes of upper gastrointestinal bleeding (Table 3).

Blood requirements

Of the 102 patients who were actively bleeding at the time of endoscopy, 89 were transfused with a total of 115 units of blood (range: 0-2 units mean: 1.30 units). The mean for all 102 patients was 1.13 units.

Of the 248 patients who were not actively bleeding at time of endoscopy, 150 were transfused with a total of 300 units of blood (range: 0-2 units mean: 2 units). The mean for all 248 patients was 1.21 units.

Hospital stay

The hospital stay for those who were actively bleeding at the time of endoscopy ranged between 2 and 5 days with a mean of 2.43 days. This contrasts to hospital stays of days, 0.097 the mean, for those who were not actively bleeding at time of endoscopy.

Mortality

There were a total of 20 deaths (5.72%), 15 were men and 5 were women, aged years (mean=77; median=76 years). The mortality is one case in the actively bleeding group (0.98%) versus 19 in the non-actively bleeding group (7.66%). The distribution was from variceal bleeding 17 (85%) and 3 (15%) from non-variceal group.

The cause of death was related to upper gastrointestinal bleeding in one case only. The overall mortality rate in our patient population was 5.72% which is somewhat lower than the 10-15% reported in the U.K. [11]. Most deaths occurred in elderly patients who suffered from serious co-morbid conditions such as pulmonary embolism, sepsis, DIC, ischemic heart disease, cerebrovascular accident, hypertension, left ventricular failure, diabetes mellitus etc. The lower morbidity rate in this study may also reflect the younger age of our patients compared with Western patients. Furthermore, the current management policies of acute upper GIT bleeding in our hospitals seem to have yielded outcomes similar to a little extent to published data from developed countries.

Discussion

Upper gastrointestinal bleeding is a major cause of admission to hospitals worldwide. The epidemiology, etiology and outcome of upper gastrointestinal bleeding vary significantly in different

geographic regions depending on the demographic and socioeconomic characteristics of the local population. The typical profile of such cases is that affecting young ages of Yemenis, due to high incidence of HBV, autoimmune hepatitis, Bilharziasis, and HCV among young Yemenies, they are also unique in that alcoholism is uncommon due to religious and social taboos. This study bridges an important gap in knowledge of the epidemiology and outcome of upper gastrointestinal bleeding.

Important observation was that peptic ulcer disease (GU + DU), as a cause of acute upper gastrointestinal bleeding, was not so common in comparison with oesophageal varices as well as in comparison with Western series. In our study it was reported that 0.86/350 and 0.57/350 for GU and DU respectively while annual incidence of hospitalization for Acute Upper Gastrointestinal hemorrhage was 102.0 per 100,000, increased markedly with age, and was twice as high in males as in females [12,13]. Peptic ulcer was assumed to be caused by non-steroidal anti-inflammatory drugs (NSAIDs) + corticosteroids [14] and helicobacter pylori in most of the cases [13]. Gastric cancer was also not common cause of acute upper gastrointestinal bleeding in this study, despite the endemicity of Helicobacter-pylori in Yemen, this raises questions about the role of H. pylori and the importance of geographic variation in the pathogenicity of different strains of this organism. Another conceivable explanation for the low incidence of gastric ulcers and gastric cancer is that the mean age of patients is significantly lower than that of Western patients [9,11].

Variceal hemorrhage accounted for 90% of upper gastrointestinal bleeding episodes in the current study. This is much higher than what had been reported in the European studies; in Amsterdam study, it was reported that incidence was 45 per 100,000 persons/year, a Canadian setting study reported that, non-variceal UGI bleeding patients over the specified time period was not common and a third study was conducted on Upper gastrointestinal bleeding in an open-access dedicated unit.

found that variceal bleeding was confirmed in 1,098 of 1,324 patients with presumed upper gastrointestinal haemorrhage (117 bleeding episodes per 100,000 per year) [12,13,15,16].

Major strengths of this study are that it provides new evidence on risk factors and outcome for upper GI bleeding. Secondly, it is one of the largest studies of upper GI bleeding, covering many people who were hospitalized with upper GI bleeding, since other studies reported in introduction include fewer numbers of patients and a short period than our study which extended for four years among 350 patients [6-9]. Thirdly, it is based on systematic record linkage to enable reliable longer term follow-up and to identify deaths that occur following discharge from hospital. The record linkage, principal

inpatient diagnoses and ascertainment of mortality have been validated previously and have been shown to be respectively >99.8%, >90% and >98% accurate [17].

Limitations of the study are, firstly, the administrative inpatient data in four investigated hospitals lacks detailed information about pathology, severity of bleeding and treatment, although some of these factors are of less importance for this study of following admission. The measures of occurrence and risk factors reported here are those from the index admission with upper GI bleeding and we recognize that some of these may occur late in the natural history of upper GI disease.

In conclusion, esophageal varices is the main cause of upper gastrointestinal bleeding in Yemen, and to little extent PUD and Gastric malignancies can cause acute upper GIT bleeding, still upper GIT bleeding causes deserves further studies in Yemen.

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