



## Original Article

# Etiology of Upper Gastrointestinal Haemorrhage in a Teaching Hospital

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### Abstract

A descriptive study on all cases of haematemesis and or melaena was carried out at Rajshahi Medical College Hospital to observe the demographic profile, clinical presentation, cause and outcome of upper gastrointestinal bleeding in a tertiary hospital of Bangladesh. Fifty adult patients presenting with haematemesis and or melaena admitted consecutively into medical unit were evaluated through proper history taking, thorough clinical examination, endoscopic examination with in 48 hours of first presentation and other related investigations. Patients those who were not stabilized haemodynamically with in 48 hours of resuscitation and endoscopy could not be done with in that period were excluded from this study.

Results our results showed that out of 50 patients 44 were male and 6 were female and average age of the patients was 39.9 years. Most of the patients were from low socio-economic condition. Farmers, service holders and laborers were the most (57%) affected group. Haematemesis and melaena (42%), only melaena (42%) and only haematemesis (16%) were the presenting features. Endoscopy revealed that duodenal ulcer( 34%) was the most common cause of UGI bleeding followed by rupture of portal varices( 16%) , neoplasm( 10%) , gastric ulcer ( 08%) and gastric erosion( 06%).

Acute upper GI bleeding is a common medical problem that is responsible for significant morbidity and mortality. The extensive clinical spectrum of gastrointestinal bleeding may encompass many different clinical scenarios. It is often very difficult to find out the cause and site of bleeding. We find that though cases of ruptured oesophageal varices were increasing, still peptic ulcer disease is the leading cause of haematemesis and melaena.

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### Introduction

Bleeding from the GI tract may present in five ways. Haematemesis is vomitus of red blood or coffee ground material. Melaena is black, tarry, foul smelling stool. Haematochezia is the passage of bright red or maroon blood from rectum. Occult

GI bleeding may be identified in the absence of overt bleeding by special examination of the stool (e.g. guaiac testing). Finally, patients may present only with symptoms of blood loss or anemia such as light-headedness, syncope, angina, or dyspnea.<sup>1</sup>

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Upper GI bleeding refers to blood loss within the intraluminal gastrointestinal tract from any location between the upper esophagus to the duodenum at the ligament of Treitz.<sup>2</sup> If vomiting occurs shortly after the onset of bleeding, the vomitus appears red and later the appearance is dark red, brown, or black precipitated blood clots in the vomitus and produces a coffee ground appearance. Melaena develops after as little as 50-100 ml of blood loss in upper gastrointestinal tract. Melaena can occur with bleeding any lesion from areas proximal to and including the Caecum. Acute blood loss greater than 50-100 ml may produce melaena for as long as a week. After stool color returns to normal, the test for occult blood test may remain positive for over a week. Stool is black tarry and foul smelling. The black, tarry character of melaena is due to degradation of blood to hematin or other hemochromes by bacteria and should not be confused with greenish character of ingested iron or the black, non foul-smelling stool caused by ingestion of bismuth. haematemesis results from a combination of large amount of blood filling the stomach together with the urge to vomit. So haematemesis generally indicates a more severe bleeding episode than melaena. Clinical presentation depends on the site, extent and rate of haemorrhage and presence of coincidental disease.

Bleeding from the upper GI tract is approximately five times more common than from lower gastrointestinal tract.<sup>3,4</sup> It is more common in men and elderly people.<sup>3,4</sup> The most common presenting features of upper gastrointestinal haemorrhage are haematemesis, melaena and shock.<sup>5</sup>

Acute upper gastrointestinal hemorrhage is the most important gastrointestinal emergency and is responsible for about 25,000 admissions to hospital each year in the UK. The incidence is 50-150/10000/year and is the highest in areas of social deprivation. It appears that the overall incidence of admissions for upper gastrointestinal bleeding decreased in the UK. In Hong Kong, the incidence has decreased by 30% over the last 10 years. The mortality of patients admitted to

hospital for acute gastrointestinal bleeding is about 10%; in the UK, crude mortality has not changed in more than half a century.<sup>6</sup>

In Thailand a review of 5000 patients of haematemesis and melaena revealed, peptic ulcer disease (51%), acute mucosal erosion (31.6%), normal study (2.46%).<sup>7</sup>

In Pakistan, a prospective study of 350 cases who presented with haematemesis endoscopic study of upper GIT of them revealed oesophageal varices in 24% and superficial mucosal lesion in 17% cases.<sup>8</sup> Mortality from bleeding ulcers increased with age.<sup>9</sup> The ASGE<sup>10</sup> Survey data suggested that healthy patient less than 60 year old with no underlying disease has a mortality of only 2%. However mortality from a first bleed from varices is around 50 % and most survivors re-bleed with inpatient mortality of about 30%.

In Bangladesh many patients are admitted in different hospitals with haematemesis and melaena, but there is a little study on the etiology of the upper gastrointestinal haemorrhage, a survey study by Khan et al (1987) has revealed the point of prevalence of DU and GU was to be 11.9% and 3.6% respectively.<sup>11</sup>

Alam MT in his study on the etiology of upper gastrointestinal haemorrhage and its prognosis showed that- duodenal ulcer was the commonest cause of haematemesis and melaena followed by oesophageal varices, gastric ulcer and erosive gastritis.

Within 12-24 hours of admission, endoscopy will detect<sup>12</sup> the causes of haemorrhage in about 80% or more if it is performed expertly. Endoscopy should be done within 48 hours of bleeding because if it is delayed, erosions may be healed and ulcer may lose the features like black base or adherent clot which enables the observer to pinpoint them as bleeding sources. In Bangladesh endoscopy is now available in almost every medical college hospitals and many diagnostic centers. So patients with upper GI hemorrhage are evaluated easily.

## Methodology

### Patients and methods

Fifty adult patients presenting consecutively to Medicine Units in Rajshahi Medical College Hospital with haematemesis and /melaena between December 2004 and March 2005 were included in the present study.

### Statistical analysis

Individual patient were given a code number. All data were collected by preformed structured questionnaire from the patient with fulfillment of inclusion and exclusion criteria. At the end of the study the relevant collected data will be compiled on a master table first. They were organized by using scientific calculator and standard statistical formula. For the statistical analysis unpaired student's 't' test, chi- square test and Z test were performed. P – Value>0.05 was considered as significant. Appropriate statistical analysis of collected data were done using computer statistical

package SPSS 12 version and appropriate statistical method were used to arrive at conclusion making necessary graphs and tables used to write the thesis.

## Results

Out of 50 patients 44 were male and 6 were female with a male female ratio n of 7.33:1. Average age of the patients was 39.9 years with the range of 18-90 years. Farmers, service holders and laborers were the most affected groups. Laborer cultivators and students suffered more (53%) from DU. Service holders and businessman suffered more (75%) from oesophageal varices.

Most (96%) of the patients were from low socio-economic condition with a mean ( $\pm$ SD) monthly income of taka 4080( $\pm$ 2045).

68% patients had blood group 'O' and 'B'.

**Table 1:** Summary of 50 patients admitted in RMCH admitted between December 2004 and March 2005

	DU	GU	Stomal	Gastric erosions	oesophageal Varices	Tumors	Average
Patients N=50	17(34%)	4 (8%)	1 (2%)	3 (6%)	8 (16%)	5 (10%)	
Age	33.35	37.75	65	34.33	49	44.2	39.9
Male: Female	16:1	3:1	1:0	3:0	8:0	4:1	7.33:1

Haematemesis or melaena and both haematemesis and melaena were the presenting feature at 16%, 42% and 42% of the patients respectively. In DU 47.05% present with melaena and 41.17% presented with both haematemesis and melaena. In oesophageal varices 75% presented with haematemesis and melaena whereas 25% presented with melaena. In GU 75% presented with haematemesis and melaena whereas 25% presented with melaena. Other presenting features were upper abdominal pain 22%, vomiting 16% and pain and vomiting 22%. 42% of patients presenting with haematemesis and melaena were smoker and 8% gave history of NSAIDs ingestion before occurrence of haematemesis and melaena. Past history of upper abdominal pain was noted in 58.88% cases. Previous history of jaundice was found in 62.5% of cases of oesophageal varices. Previous history of haematemesis and melaena was found in 11.76%, 25% and 50% cases of DU, GU, and oesophageal varices respectively. In

general upper abdominal pain was the most (54%) common past history. Urgent endoscopic examination with in 48 -72 hours of bleeding revealed that duodenal ulcer(34%) was the most common cause of UGI bleeding followed by rupture of portal varices (16%), neoplasm (10%), gastric ulcer (8%) and gastric erosions(6%).

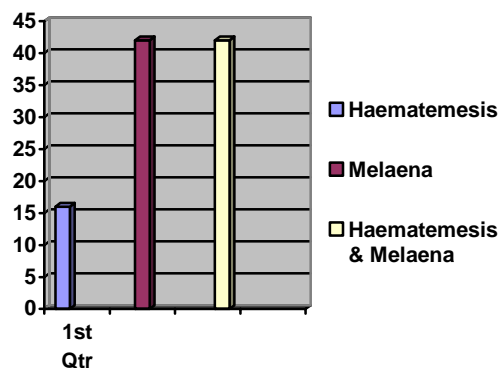


Figure 1: Presentation of acute upper GI bleeding in %

## Discussion

In our study average age of the patients was 39.9 years with the range of 18-90 years. 50% of patients were in the age range 20-39 years. This reflects that during the active age of life this disease occurs most.

The catchments area of Rajshahi medical college Hospital is populated by those districts where most the people are farmer and laborer. It is also a city of schools, colleges and varsity. Most patients presenting with haematemesis and melaena are cultivators (22%), laborers (17%) and students (15%). This figure may be different in other parts of country. But it should be remembered that poor socioeconomic condition predisposes to H. Pylori infection and poor compliance to anti ulcer drugs.

Monthly income of 80% of patients was 2000-5000 taka. Lack of money creates difficulty in early diagnosis and treatment of disease and creates complication of peptic ulcer and chronic liver diseases and others. Thus poor and middle class people suffer more from upper GI bleeding.

In the current study male female ratio is 11.5:1 for bleeding peptic ulcer. This ratio was 16:1 & 3:1 for duodenal ulcer and gastric ulcer respectively. This increased incidence of the ratio reflects that male is common sufferers. In the present series, most of the patients with upper gastrointestinal haemorrhage presented with both haematemesis and melaena 42% cases, melaena in 42% cases and only haematemesis in 16% cases. A bleeding duodenal ulcer is likely to be presented with melaena more frequently than haematemesis while a bleeding gastric ulcer patient may present with haematemesis more frequently than melaena. In the present series DU patients presented with haematemesis and melaena in 41.17% cases, melaena in 47.05% and haematemesis in 11.76%. In the erosive gastritis 33.33% presented with haematemesis and 66.66% presented with both haematemesis and melaena. In variceal group, 75% of patients presented with both haematemesis and 25% with melaena. Bleeding GU presented in 75% cases with haematemesis and melaena and in 25% cases with melaena. Variations in presentation in cases of upper GI haemorrhage in

different studies may be explained by the fact that haematemesis and melaena is dependent upon the rate, amount and site of bleeding.

Peptic ulcer is the commonest cause of haematemesis and melena<sup>13</sup>

In the present study peptic ulcer causing upper GI bleeding in 50% cases and DU was 34% of all cases and gastric ulcer was 8% and stomal ulcer 2%. variceal bleeding is an important cause of upper GI bleeding. In our study 16% were due to variceal bleeding.

The ratio of bleeding duodenal ulcer to gastric ulcer was 4.25:1. Alam<sup>14</sup> et al, Mmun et al<sup>15</sup>. Miah et al<sup>16</sup> found the ratio 5.7:1, 11.66:1, 3.5:1 respectively.

Smoking was associated with 35.29% cases of patients with duodenal ulcer bleeding, 50% cases of gastric ulcer and 66.66% cases with erosive gastritis.

Oesophago-gastro-duodenoscopy is the diagnostic tool in acute upper GI gastrointestinal hemorrhage<sup>17</sup>. Duodenal ulcer was diagnosed clinically in 20 patients but at endoscopy it was only 17. Accuracy rate was 85% Azad khan et al<sup>[18]</sup> also found accurate diagnosis in 69.65 of the cases. 72.72% cases of clinically suspected variceal bleeding were proved to be correct endoscopically. Various literatures showed that in 20-31% of patients had bleeding frequently from sources other than varices e.g. from small erosions in the stomach (portal gastropathy)

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