

## A STUDY ON UPPER GASTROINTESTINAL ENDOSCOPIC FINDINGS IN PATIENTS WITH UPPER GASTROINTESTINAL BLEEDING

Salla Surya Prakasa Rao<sup>1</sup>, Tirupati kedar<sup>2</sup>, Paidi Sailaja<sup>3</sup>, Ravindra Dev Vechalapu<sup>4</sup>

<sup>1</sup>Assistant Professor, Department of General Medicine, Andhra Medical College, Visakhapatnam.

<sup>2</sup>Post Graduate, Department of General Medicine, Andhra Medical College, Visakhapatnam.

<sup>3</sup>Post Graduate, Department of General Medicine, Andhra Medical College, Visakhapatnam.

<sup>4</sup>Post Graduate, Department of General Medicine, Andhra Medical College, Visakhapatnam.

### ABSTRACT

#### BACKGROUND

Vomiting of blood almost always proximal to the ligament of Treitz is the upper gastrointestinal haemorrhage. The incidence of acute upper gastrointestinal haemorrhage has been estimated to be 50-100 per 1,00,000 person per year, with an annual hospitalization rate of approximately 100 per 1, 00,000 hospital admission. This study is to find out the prevalence of nature of lesion on Upper Gastrointestinal Endoscopy in patients admitted for Gastrointestinal bleeding. (UGI Bleed).

#### MATERIALS AND METHODS

Place of Study- Department of General Medicine, Andhra Medical College, Visakhapatnam, India.

Type of Study- Prospective study.

Period of Study- July 2015 to August 2016.

#### RESULTS

##### The Results Study on Endoscopic Findings in Upper Gastro Intestinal Bleed are

1. The peptic ulcer disease was the most common lesion found on endoscopy with prevalence of 54%.
2. Varices contributes second common lesion, next to peptic ulcer disease in UGI bleed with prevalence of 16%.
3. Minor UGI bleed was the commonest presentation. Majority of lesions (60%) presented with minor UGI bleed, 28% lesions presented as moderate UGI bleed. Only 8% presented as major UGI bleed.
4. Varices account for the most common cause for major UGI bleed contributing 50%.
5. Gastric ulcer was commonest lesions accounting for 37 cases (37%) among 72 cases having single acid peptic lesions on endoscopy. The second most common is duodenal ulcer (31%).
6. Multiple lesions were found in 10% of cases. Peptic ulcer lesions were found in 20% of total number of varices cases.

#### CONCLUSION

Peptic ulcer disease was found to be most common lesion causing UGI bleed, with most common presentation as minor UGI bleed and variceal bleed being most common cause of major UGI bleed.

#### KEYWORDS

Upper Gastrointestinal Endoscopic findings, Upper gastrointestinal bleeding, Varices.

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#### BACKGROUND

Vomiting of blood almost always proximal to the ligament of Treitz is the upper gastro intestinal bleeding (UGIB). Gastro intestinal bleeding is a common clinical problem requiring more than 300,000 hospitalization annuals. Upper Gastrointestinal bleeding, which most commonly arises from mucosal erosive diseases, account for up to 20,000 deaths annually.

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*Corresponding Author:*

*Dr. Salla Surya Prakasa Rao,*

*Assistant Professor, Department of General Medicine, Andhra Medical College, Visakhapatnam.*

*E-mail: drssp56@gmail.com*

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The overall incidence of acute upper gastrointestinal haemorrhage has been estimated to be 50-100 per 1,00,000 person per year, with an annual hospitalization rate of approximately 100 per 1, 00,000 hospital admission. The most important in the management of gastrointestinal bleeding is to determine bleeding from upper gastrointestinal tract is approximately five times more common than bleeding from lower gastrointestinal tract. The Upper Gastrointestinal Endoscopy findings plays vital role in diagnosis and management of

1. Source of bleeding.
2. Stop active bleeding.
3. Treat underlying abnormality.
4. Prevent recurrent bleeding.

Historically, the most common cause of upper GI bleeding has been gastro duodenal ulcer disease, although



other upper gastro intestinal tract mucosal lesion account for a substantial proportion of cases. Also the Upper Gastrointestinal Endoscopy plays important role with patients reported to be associated with increase in mortality with Upper gastrointestinal bleeding.

These conditions which will increase the mortality are,<sup>1,2</sup>

1. Age.
2. Onset of bleeding.
3. Co-morbidity.
4. Hypotension and shock at presentation.
5. Fresh bleed in Ryle's tube aspirate.
6. Haemoglobin level at presentation and on serial follow-up.
7. Number of packed cells transfusions.
8. Corticosteroids.
9. Combined use of aspirin and oral anticoagulants.

Patients who start bleeding during hospitalization (Secondary Bleeding) have a significantly higher mortality as compared to those who bleed prior to hospitalization (Primary Bleeding).<sup>3</sup> this is primarily because of presence of co-morbidity factors in hospitalized patients. Mortality is significantly higher in patients with co morbid illness which include CNS diseases, hepatic insufficiency, pulmonary diseases, cardiac diseases, renal failure, physiological stress and cancer. The mortality increases with increase of co-morbid conditions.<sup>3,4</sup> Use of low dose aspirin is associated with moderately reduced risk of severe bleeding and a decreased mortality from GI bleeding.<sup>5,6</sup> Possible explanation is the increased patient awareness and vigilance and propensity to bleed from minor lesions with aspirin therapy. Endoscopy has beyond doubt reduced morbidity, hospital stay, risk of recurrent bleeding and need for surgery in patients with non-variceal upper GI bleed. Early endoscopy (Within 24 hours) in an intensive care setting.

## AIMS AND OBJECTIVES

To find out the prevalence of nature of lesion on Upper Gastrointestinal Endoscopy in patients admitted for UGI bleed and also to find out the prevalence of nature of lesion in patients with minor, moderate, major bleed in King George hospital of Andhra Medical College, Visakhapatnam, India.

## MATERIALS AND METHODS

### Source of Data

Patients with upper gastro-intestinal bleed admitted in King George Hospital, Andhra medical college, Visakhapatnam, India were studied during the period of July 2015 to August 2016. Before commencement of study, permission was obtained from Ethics committee, Andhra Medical College, Visakhapatnam. All enrolled patients were informed about the nature of the study and their right to refuse. The informed written consent was taken before including them in the study.

- **Sample Size:** 100 patients.
- **Study Design:** Prospective study.
- **Study Subjects:** All patients to fulfil the inclusion criteria.

## Inclusion Criteria

1. All adult patients of both sexes who were giving definite history of vomiting of frank blood or coffee ground coloured vomit and / or passed dark coloured stools were chosen for this study.
2. Inpatients admitted for other illnesses and who subsequently developed UGI bleeding following prescription with drugs like aspirin, other NSAIDS, steroids, anticoagulants and other gastro toxic drugs were also included
3. Inpatients who developed UGI bleed after administration for severe medical illness like respiratory failure and sepsis.

## Exclusion Criteria

The following groups of patients were excluded from this study after detailed history taking, clinical examination and investigations because of the confounding factors which will interfere with the results.

1. Patients with history of epistaxis and bleeding gums and subsequently developed spurious hematemesis.
2. Bleeding and clotting disorders.
3. Haematological disorders.
4. Critically ill patients those who could not be mobilized for UGI endoscopy.

Patient's characteristics like age and sex were noted. Detailed history regarding the UGI bleeding like number of times of hematemesis approximate quantity of blood vomited each time, associated with melena or presenting with melena alone were obtained. Symptoms of common diseases that can lead to UGI bleeding and detailed history of drug intake like aspirin, other NSAIDS, steroids and symptoms due to blood loss were recorded in the questionnaire.

Detailed history obtained from the patients regarding the risk factors of UGI bleeding like,

1. Known peptic ulcer disease (Diagnosed by a Physician or a Gastroenterologist)
2. Alcoholism (Those who are consuming alcohol at least 100 ml/day Regularly for >3 months).<sup>7</sup>
3. Smoking (Those patients who are smoking one or more beedies or cigarettes per day regularly for >3 months)
4. Stress and serious systemic illnesses of the patients.
5. Intake of drugs that may cause UGI bleeding when taken like NSAIDS, steroids, bisphosphonates and chemotherapeutic agents were obtained. Ruling out haematological disorders causing UGI bleed.

## Upper Gastrointestinal Endoscopy

Endoscopy was done for all the patients after overnight fasting, using Olympus video endoscopic system CV-170, to visualize directly the mucosa of the oesophagus, stomach and duodenum, like varices, ulcers or erosions. The endoscopic stigmata of active or recent haemorrhage and endoscopic prognostic features like number of ulcers, site and location of ulcers, size of ulcers, bleeding or not, healing

or not, clean base of the ulcer or adherent blood clot, oozing of blood from the ulcer base and about visible blood vessel were studied. The site, grading of varices were studied and search for rare causes for UGI bleed were made.

**Study Approach**

The Number of patients affected with UGI bleed were studied with respect to age group, approximate quantity of total blood loss, prevalence of endoscopic findings.

**OBSERVATIONS AND RESULTS**

**Demographic Profile: Age Distribution**

Age	Male	Female	No. of Patients
<20 yrs.	2	1	3
20-34	11	3	14
35-49	20	11	31
50-64	27	11	38
65-79	12	2	14
<b>Total</b>	<b>72</b>	<b>28</b>	<b>100</b>

**Table 1**

It was found that majority of patients (38%) were in the age group of 50- 64 years. The highest age of patient participated in study was 75 years and lowest age of patient was 15 years.

**Sex Distribution**

Sex	No. of Patients %
Male	72%
Female	28%

**Table 2**

In the study among 100 patients, 72 were males and 28 were females.

**Severity of Lesion**

Sl. No	Nature of Lesion	Minor	Moderate	Major	Malena Only
1	Gastric Ulcer	15	10	1	0
2	Duodenal Ulcer	14	7	1	0
3	Gastric Erosion	7	3	0	0
4	Oesophageal Varices	4	2	3	3
5	Oesophagitis	7	1	0	0
6	Duodenitis	4	0	0	0
7	Fundal Varices	2	1	1	0
8	Hemorrhagic Gastritis	0	1	0	0
9	Oesophageal Ulcer	0	1	0	0
10	Ca. stomach	1	0	0	1
11	Gastric & Duodenal Ulcer	4	0	2	0
12	Varices & Peptic Ulcer	2	2	0	0
	<b>Total</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>

**Table 5**

It was observed that 60% of lesions were presented as minor UGI bleed and 28% as moderate UGI bleed. Only 8% of lesions presented with major UGI bleed. Varices (50%) were the most common lesion found in major UGI bleed.

**Frequency of Haematemesis**

Sl. No.	No. of Bouts of Vomiting	Percentage (%)
1.	One	34
2.	Two	42
3.	Three	13
4.	Four	8
5.	Five	3

**Table 3**

It was found that percentage of patients with two episodes of hematemesis was more with 42%. The maximum frequency of hematemesis was five. Single episode of hematemesis was observed in 34 patients. (34%).

**Quantity of Blood Loss**

Sl. No.	Quantity of Blood Loss	No. of Patients
1.	<100 ml	60
2.	100 to 1000 ml	28
3.	>1000 ml	8
4.	h/o melena	4

**Table 4**

It was found that majority of patients 60% were having minor UGI bleed with <100 ml of blood less. Only 8% of the patients had major UGI bleed and four patients had only melena.

**Prevalence of Endoscopic Lesion**

Sl. No	Nature of lesion	<20		20-34		35-39		50-64		65-79		Total %
		M	F	M	F	M	F	M	F	M	F	
1	Gastric ulcer alone	1	-	4	1	3	2	8	3	4	-	26
2	Duodenal ulcer	-	1	3	1	4	3	5	2	3	-	22
3	Gastric erosion	-	-	1	-	2	1	3	1	1	1	10
4	Oesophageal varices	1	-	1	1	3	1	3	1	1	-	12
5	Oesophagitis	-	-	1	-	2	1	1	1	2	1	8
6	Duodenitis	-	-	-	-	1	-	2	1	-	-	4
7	Fundal varices	-	-	-	-	1	1	1	-	1	-	4
8	Hemorrhagic gastritis	-	-	-	-	-	-	1	-	-	-	1
9	Esophageal ulcer	-	-	-	-	1	-	-	-	-	-	1
10	Ca. stomach	-	-	-	-	1	-	1	-	-	-	2
11	Gastric & duodenal ulcer	-	-	1	-	1	1	1	2	-	-	6
12	Varices & peptic ulcer	-	-	-	-	1	1	1	-	-	1	4
<b>Total</b>												<b>100</b>

**Table 6**

In this study among 100 patients, 26 patients (26%) had gastric ulcer alone, 22 patients (22%) had duodenal ulcer alone and 6 patients had both gastric ulcer and duodenal ulcers (6%), collectively comprising most common cause of UGI bleed contributing 54% of the total. It was found that oesophageal varices were the second most common lesion contributing 12% of UGI bleeding. 4 cases (4%) of fundal varices were noted. Multiple lesions were observed in 10% of cases.

**Prevalence of Acid Peptic Lesion**

Sl. No	Acid Peptic Disease	Male	Female	Total	%
1	Gastric ulcer	20	6	26	37%
2	Duodenal ulcer	15	6	22	31%
3	Gastric erosion	7	3	10	14%
4	Duodenitis	3	1	4	5%
5	hemorrhagic gastritis	1	0	1	1%
6	Oesophagitis	6	2	8	11%
7	Esophageal ulcer	1	0	1	1%
<b>Total</b>				<b>72</b>	

**Table 7**

It was found that gastric ulcer was present in 26% patients (37%) among 72 patients of with single acid peptic disease lesion only. Duodenal ulcer 31% was the second common lesion gastric erosion was seen in 14% of Patients with acid peptic lesion. Four cases were due to duodenitis.

**DISCUSSION**

**1. Sex**

Out of one hundred patients studied, seventy two were male patients and twenty eight were female. In a Scandinavian study,<sup>8</sup> it was found that incidence of UGI bleeding was twice as high among men as among women

**2. Age**

The percentage of number of patients in the age group of equal to or above 50 yrs. of age was 52% comprising more than 1/2 of all the patients.

In this study it was found that elderly patients had bleeding in a high incidence because the frequency of bleeding is directly related to the duration of the disease. The increased incidence of UGI bleed in elderly

individuals were also due to frequent prescription of NSAIDs and aspirin for their cardiac problems and the relative risk was 2.0 times higher than the others. In the early study by Griffith WJ et al<sup>9</sup> the relative risk for elderly patients with age group >60 years was 3.8 times than the others.

**3. Severity of Hematemesis**

Percentage of patients with one or two episodes of hematemesis was 76%. 60% of the patients admitted for UGI bleed were having minor UGI bleed (<100 ml). Only 8% of the patients had severe UGI bleeding (1000 ml) in the present study and majority of the patients 50% were found to have oesophageal varices and fundal varices on endoscopy.

In this study among 8 cases of major UGI bleed, oesophageal varices (3 cases) and fundal varices (1 case) contribute 50% of total number of major UGI bleed. Rupture of varices is the most common cause of life threatening haemorrhage. Risk of bleeding is greatest when varices are large and when they are prominent in the gastric fundus. (Lebrecc, Deglenry P, 1980).<sup>10</sup>

#### 4. Endoscopic Findings

In the present study, patients had undergone delayed UGI endoscopy by three to five days. The prevalence of nature of lesions is as follows.

##### 4.1. Peptic Ulcer

In this study, gastric ulcer alone 26 cases (26%), duodenal ulcers alone 22 cases (22%) and both lesions in a same patient 6% collectively remain the most common cause of UGI bleed with total of 54%. In American Society for Gastrointestinal Endoscopy (Silverstein FF, Gilbert DA, Tedesco F J, et al<sup>3,11</sup>) Chronic gastric and duodenal ulcers collectively remain the most common cause of hematemesis and melena. Rockall TA, Logan RF; (Lancet 1996).<sup>12</sup> (Gut 1996).<sup>4</sup> reported peptic ulcer was the most common lesion on endoscopy in cases with UGI bleed. The increased frequency of gastric ulcers bleed than duodenal ulcers is likely to be due to gastric ulcers have a slightly greater tendency to bleed than duodenal ulcers, 23.7% compared with 19.1%.

##### 4.2. Oesophageal Varices

In this study, both oesophageal and fundal varices contributes 16% of cases of total UGI bleed. Atkinson et al<sup>13</sup> compiled oesophageal varices accounted for an overall 7.3% to 11.1% in his study. In OMGE International upper GI Bleeding survey, 1978-86, oesophageal varices was the second most common cause of UGI bleed. M Van Leerdam et al<sup>14</sup> quoted 7-20% cases of UGI bleed were due to varices.

##### 4.3. Gastric Erosion

In this study, 10% of cases were due to gastric erosion. DM Jensen et al: 200371, mentioned 2-7% of UGI bleed were due to gastric erosion. Erosive gastritis 7-22% were reported in Johnston SJ, Jones PK et al<sup>15</sup> The American Society for gastrointestinal Endoscopy National Survey of UGI bleed (Gilbert DA, Tedesco FJ, et al)<sup>11</sup> reported 23.4% cases of gastric erosions.

##### 4.4. Oesophagitis

In this study, 8% of cases were due to Esophagitis. KC Thomopoulos et al<sup>16</sup> European journal gastroenterol Hepatol reported 1-13% cases of UGI bleed were due to Esophagitis. The American Society for gastrointestinal endoscopy national survey (Gilbert et al<sup>11</sup>) reported 6.3% cases of esophagitis as a cause for UGI bleed.

##### 4.5. Carcinoma Stomach

In this study, 2% of cases of acute UGI bleed were due to Carcinoma Stomach. In Jones FA.<sup>17</sup> Problems of alimentary bleeding, he described, Gastric cancer accounted for 2.7% of cases of acute alimentary tract bleeding.

##### 4.6. Varices and Peptic Ulcer

In this study, 4% UGI bleed had both varices and peptic ulcer findings on UGI Endoscopy. In this study, varices and peptic ulcer (4 cases) contributes 20% of total number of varices cases (20). Dagradi AE, Mehler R, Tan et al, AMJ 1970.<sup>18</sup> mentioned other sources of bleeding in oesophageal varices patients include gastric and duodenal ulcers in upto 20% of cases.

##### 4.7. Duodenitis

In our study, 4 cases of UGI bleed were found to have Duodenitis on UGI Endoscopy as evident as friable and punctuate erosion of a slightly nodular mucosa, mainly in the duodenal bulb, can be a source of blood loss. In ASGE Survey.<sup>11</sup> duodenitis was observed in 5.8% cases.

##### 4.8. Other Causes

Other causes of UGI bleed that occurs in less frequency in this study includes one case of oesophageal ulcer and haemorrhagic gastritis.

#### Summary and Conclusion

The study on endoscopic findings in upper gastro intestinal bleed concludes that

1. The peptic ulcer disease was the most common lesion found on endoscopy with prevalence of 54%.
2. Varices contributes second common lesion, next to peptic ulcer disease in UGI bleed with prevalence of 16%.
3. Minor UGI bleed was the commonest presentation. majority of lesions (60%) presented with minor UGI bleed 28% lesions presented as moderate UGI bleed. Only 8% presented as major UGI bleed.
4. Varices account for the most common cause for major UGI bleed contributing 50%.
5. Gastric ulcer was commonest lesions accounting for 37 cases (37%) among 72 cases having single acid peptic lesions on endoscopy. The second most common is duodenal ulcer (31%).
6. Multiple lesions were found in 10% of cases. Peptic ulcer lesions were found in 20% of total number of varices cases.

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