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### RESEARCH ARTICLE

#### TO DETERMINE THE PREVALENCE OF DUODENAL ULCER AMONG THE PATIENTS OF ACUTE UPPER GASTROINTESTINAL BLEEDING IN A TERTIARY HOSPITAL IN TRIPURA

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#### Abstract

GI bleeding is a very common but challenging emergency for physician and gastroenterologists often associated with high mortality. This is a cross-sectional study to determine the prevalence of duodenal ulcer among UGIB in a prospective manner. We the team of physicians performed UGI endoscopy in several patients presenting with UGIB in a setup of tertiary hospital and found several causes. Among which duodenal ulcer was leading cause followed by variceal bleed. This study will help the clinicians working in peripheral hospitals of our small state Tripura to start basic conservative treatment suspecting the common etiologies and provide better treatment and care of UGIB patients.

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#### Introduction:-

Gastrointestinal bleeding is a challenging emergency which is associated with high mortality. The clinical presentation of GI bleeding depends on the location, rate of bleeding and etiology of the disease. Hematemesis is defined as vomiting of blood indicating upper gastrointestinal (UGI) bleeding and the site of bleeding is above the ligament of Treitz. The blood may be fresh and red colored or may be old having the appearance of coffee grounds.

Malena is defined as passage of black tarry stools which are often foul smelling. This results from degradation of blood to haematin and other haemochromes. Melena is usually the result of UGIB bleeding, but slow bleeding from distal small bowel, caecum and ascending colon can also lead to melena; about 50 to 100 ml of bleeding in the GI tract is required to cause melena. Haematochezia refers to the passage of fresh red blood from the rectum, which suggests a low source of bleeding but can also occur with massive bleeding from the UGI tract (usually more than 100 ml). About 30% of patients with UGI bleeding present with haematemesis, 30% with melena and 50% with both.

The common causes of UGI bleeding include peptic ulcer disease, esophageal or gastric varices, Mallory-Weiss tear, erosive gastritis or duodenitis, malignancy, angiodysplasia and Dieulafoy's lesions. Peptic ulcer disease is the most common cause, accounting for 50%. Bleeding from varices esophageal or gastric accounts for 10% to 30%. Studies from central and North India have described variceal haemorrhage to be more common (40% to 50%). About 10% of patients with portal hypertension may have a non-variceal source of bleeding such as peptic ulcer or Mallory-Weiss tear. Mallory-Weiss tear usually occurs in the gastric mucosa at gastro-

esophageal junction and is considered to be caused by forceful retching. Dieulafoy's lesion denotes erosion of mucosa by an underlying large sized arteriole. Though Dieulafoy's lesions can be located anywhere in the GI tract, they are typically found in the upper part of the stomach.

Upper GI Bleeding is an important medical emergency which can be catastrophic many a times. Hence, acute Upper GI bleeding needs prompt assessment and aggressive medical management [2,3]. All patients need to undergo endoscopy to diagnose, assess, and possibly treat an underlying Lesion". Rebleeding or continued bleeding is associated with increased mortality; therefore, differentiating the patient with a low probability of rebleeding and little comorbidity, from the patient at high risk for rebleeding with serious comorbidities is imperative. And here lies the importance of emergency upper GI endoscopy.

Besides, the timely endoscopic intervention will give us more clues on obscure GI bleeding. as, late endoscopy might not achieve the advantage of intervention. Thus, through the emergency endoscopic procedure, we will be able to not only come to the etiologic conclusion of a disease; we can have a more vivid and elaborated diagnostic approach towards the obscure GI bleeding. Diagnostic upper pan-endoscopy is the preferred UGI investigative procedure for UGI bleeding for its accuracy, low rate of complications and potential for therapeutic intervention. It is the gold standard procedure [1]

Upper endoscopy is performed for many indications such as Gastro-intestinal bleeding, abdominal pain, dysphagia, or surveillance of premalignant lesions. Endoscopes help medical procedures to be less invasive, thereby reducing the risk of complications as well as costs and recovery times.

A meta-analysis found that routine endoscopy reduces the rate of recurrent bleeding but not the need for surgery or the risk of death [7]. The etiology of UGI bleeding varies from country to country and region to region of India as there is paucity of epidemiological data on UGI bleeding. To the best of our knowledge this study has not been done previously in our state, Tripura. Hence, to know the etiology of UGI bleeding in Tripura and North-East India, the study will provide an new insight.

Our center AGMC and GBP hospital introduced the endoscopy services in 2001 and performing fiberoptic upper GI endoscopy in the diagnosis and treatment of upper gastrointestinal bleeding. Agartala Government Medical College is the tertiary care center of Tripura. This is the most prominent centre of Endoscopy in state. Hence, our data will be reflecting the data of our state. The unit performing almost 2000 upper GI endoscopy every year and almost 40% of them are due to upper GI bleeding.

### **Aim and objectives:-**

To determine the prevalence of Duodenal ulcer among the patients of acute upper gastrointestinal bleeding in a tertiary hospital.

### **Materials and Method:-**

The study was conducted in the Endoscopy Unit, Department of Medicine, Agartala Government Medical College and GBP Hospital, Agartala for one year with effect from March, 2022 to Feb, 2023.

Type of Study: The study was a Prospective - Cross Sectional Study.

### **Subjects:**

All the patients, both male and female, admitted with Upper GI Bleeding (Hematemesis/ Melena) in the Medicine ward of AGMC and GBP hospital, Agartala.

### **Sample size:**

In an equation where  $p+q=100$ , let  $p$  be the sensitivity of Endoscopy and  $q$  the non-sensitivity of UGI Endoscopy. The standard error of  $p$  is given by the formula  $\sqrt{pq/n}$ , where  $n$  is the sample size.

It is given that  $p=90.0\%$ ,  $q=100$  minus  $p=10$  per cent. Allowance of error (E) 10 per cent of sensitivity and  $n$  is to be found out based on these details given.

$E=10$  per cent of sensitivity = 10% of  $p=10/100 \times 90 = 9$  per cent  $Z_{\alpha/2} = E/\sqrt{pq/n}$ ;  $\alpha/2 = 20.025 - 1.96$

When both sides are squared, formula is

$$Z^2 \alpha^2 = E^2 / pq / n \text{ i.e., } n = Z^2 \alpha^2 pq / E^2 = (1.96)^2 \times 90.0 \times 9 / (9)^2 \\ = 3.841 \times 90 \times 1/9 = 38.416$$

Considering 39 no. of cases to be the minimum number for statistical significance, it was decided that 100 number of cases were examined during this period.

**Inclusion criteria:**

Adult male and female patients presented with Melena or Hematemesis in various Medicine wards.

All the patients were stabilized hemodynamically before the endoscopic procedure.

Endoscopy was done within 24 hours of admission to hospital.

**Exclusion criteria:**

Hemodynamically unstable Patients. Previously diagnosed/treated Upper GI malignancy.

Bedridden and severely ill patients.

Patients or guardian denial for the endoscopic procedure. Any such patients in whom endoscopy cannot be performed.

**Result:-**

In my study, the most common cause of upper GI bleeding is duodenal ulcer consisting of 51 patients (51%), followed by esophageal varices 28 (28%) patients, gastric erosions 20 (20%) patients and ulcerative growth 2 (2%) patients.

**Discussion:-**

In our study, commonest cause of UGI bleed was from Duodenal ulcer (51%). In other studies in India, Anand et al reported an incidence of 38.5% and Rao et al reported 285 patients of duodenal ulcer in their studies<sup>2,3</sup>. In our state, common habits like smoking, chewing tobacco, over the counter NSAID use and drinking alcohol may have strong correlation with these findings.

**Conclusion:-**

This was a small study performed in the only tertiary hospital of our small state Tripura. The study could reveal the general etiological status of the patients presenting with upper gastrointestinal bleed and help us to plan their management based on the etiopathology on emergency basis and preventing any kind of poor outcome. We will continue to collect data from various UGIB patients and publish them time to time for benefit of young practising doctors as well as patients seeking our advice.

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