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**Research Article**

### VARICEAL AND NON-VARICEAL GASTROINTESTINAL BLEEDING: A LIFE-THREATENING DISORDER IN PATIENTS PRESENTED WITH CIRRHOSIS ALSO EXAMINE THE OUTCOMES AND MORTALITY ASSOCIATED TO ACUTE VARICEAL BLEEDING & NON-VARICEAL BLEEDING

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**Abstract:**

**Objective:** To examine the clinical outcomes of cirrhotic patients presented with variceal and non-variceal gastrointestinal bleeding.

**Study Design:** Retrospective/observational

**Place and Duration of Study:** Department of Medicine, Chandka Medical College Hospital, Larkana from 1<sup>st</sup> January 2019 to 31<sup>st</sup> December 2019.

**Materials and Methods:** One hundred cirrhotic patients of both genders with ages >20 years presented with upper gastrointestinal bleeding were enrolled. Fifty cases with acute variceal bleeding and 50 cases with non-variceal bleeding were examined. Clinical outcomes such as mortality, length of hospital stay, Intensive care admission and 60 day readmission were examined and compare the findings between both groups.

**Results:** There were 68 (68%) male patients and 32 (32%) female patients. Mean age of patients in variceal group was 54.25±8.55 years and in non-variceal group mean age was 59.52±10.25 years (p=0.004). Oesophageal varices was the most common etiology in acute variceal bleeding group 34 (68%) and in non-variceal bleeding that was 32% (p=0.005). There was no significant difference found in term of mortality between both groups 16% vs 12% in variceal and non-variceal. No significant difference was found in length of hospital stay 4.5±1.5 vs 5.7±2.8 days. Readmission was significantly high in patients with non-variceal bleeding 28% than variceal bleeding 16%.

**Conclusion:** There were no significant difference found regarding mortality, length of hospital stay between acute variceal bleeding patients and non-variceal bleeding patients. However, we found significant difference in term of readmission between both groups.

**Key words:** Cirrhosis, Upper gastrointestinal bleeding, Variceal, Non-variceal, Outcomes, Mortality

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**INTRODUCTION:**

Globally, upper gastrointestinal bleeding (UGIB) is a common gastrointestinal (GI) emergency presenting as hematemesis and/or melena and rarely as hematochezia and is associated with high rate of morbidity and mortality.<sup>1</sup> The prevalence of UGIB varies between 40 and 150/100,000 population and increases appreciably with age. More than 350,000 patients are hospitalized each year in the United States for UGIB<sup>2</sup> and mortality rates of 5-11% have been reported representing a serious and life-threatening entity.<sup>3</sup> Many of causes are associated to UGIB. These causes are stratified as variceal and nonvariceal UGIB. Because the treatment modalities and prognosis are different among patients with acute variceal bleeding (AVB) and non-variceal bleeding (NVB) upper GI bleeding.<sup>4</sup> Endoscopy is the primary diagnostic test to examine the UGIB. The primary diagnostic test for evaluation of UGIB is endoscopy. Early endoscopy and endoscopic appearance of certain lesions helps to guide care and thereby reduce the costs and duration of hospitalization.<sup>5</sup>

Liver cirrhosis is the commonest cause of portal hypertension and it may resulted the happening of esophageal varices.<sup>6</sup> In Pakistan, hepatitis and liver cirrhosis rate is quite high which may lead to increase incidence of upper GI bleeding.<sup>7</sup>

Endoscopy is commonly used for diagnosing the causes of upper GI bleeding either varices or nonvarices. It resulted better outcomes such as decrease in need for blood transfusion, low rate of need to ICU and less hospital stay if endoscopy performed within the first twenty four hours of hospital admission.<sup>8-10</sup> The present study was conducted aimed to examine the clinical outcomes of acute variceal and non-variceal GI bleeding in cirrhotic patients.

**MATERIALS AND METHODS:**

This retrospective/observational study was carried out at Department of Medicine, Chandka Medical College Hospital, Larkana from 1<sup>st</sup> January 2019 to 31<sup>st</sup> December 2019. A total of 100 cirrhotic patients of both genders with ages >20 years presented with upper gastrointestinal bleeding were enrolled. Patients detailed demographic including age, sex and residence were recorded. Patients readmitted due to UGIB, already on management of UGIB and those who were not interested and do quit during analysis were excluded. Patients were underwent upper endoscopy. We cut up patients into two groups. Group A (acute variceal bleeding) consist of 50 patients and Group B (non-variceal bleeding) and consist of 50 patients. Acute variceal bleeding is defined as the detection of varices on endoscopy with high risk stigmata. Clinical outcomes such as mortality, length of hospital stay,

Need to Intensive care and 60 day readmission were analyzed and compare the findings between both groups. All the data was analyzed by SPSS 21.0. Chi-square test was applied. Mean and SD was obtained. P-value <0.05 was considered as statistically significant.

**RESULTS:**

There were 35 (70%) patients were males while 30% were females in group A and 33 (66%) patients were males and 17 (34%) patients were females in group B. The mean age of patients in variceal group was 54.25±8.55 years and in non-variceal group mean age was 59.52±10.25 years (p=0.004). 28 (56%) patients in Group A had rural residence while 22 (44%) had urban residence while in Group B, there were 26 (52%) patients had rural residence while 24 (48%) had urban residency (Table 1). Oesophageal varices alone were the most frequent etiology in group A patients 34 (68%) followed by esophageal and fundal varices 10 (20%) and fundal varices 6 (12%). In non-variceal bleeding patients gastritis was the most frequent cause 50% followed by esophageal 32%, gastric and duodenal ulcer 6 (12%) and gastric ulcer 3 (6%) [Table 2].

In hospital mortality was observed in 8 (16%) patients in Group A (acute variceal bleeding) while 6 (12%) in Group B (non-variceal bleeding) p=0.552. There was no significant difference found regarding ICU admission between both groups 20% vs 16%. No significant difference according to length of hospital stay was 4.5±1.5 vs 5.7±2.8 days between both groups. Readmission was significantly high in patients with non-variceal bleeding 28% than variceal bleeding 16% p-value <0.05 (Table 3).

**Table 1: Baseline Characteristics of all the patients**

Variable	Group A	Group B	P value
Mean age (years)	54.25±8.55	59.52±10.25	0.004
<b>Gender</b>			
Male	35 (70%)	33 (66%)	>0.05
Female	15 (30%)	17 (34%)	
<b>Residence</b>			
Rural	28 (56%)	26 (52%)	>0.05
Urban	22 (44%)	24 (48%)	

**Table 2: Causes of upper GI bleeding**

Causes	Group A	Group B	P value
Esophageal	34 (68%)	16 (32%)	0.005
Esophageal & fundal	10 (20%)	0 (0%)	<0.05
Fundal	6 (12%)	0 (0%)	<0.05
Gastritis	0 (0%)	25 (50%)	<0.05
Gastric & duodenal ulcer	0 (0%)	6 (12%)	<0.05
Gastric Ulcer	0 (0%)	3 (6%)	<0.05

**Table 3: Clinical outcomes between both groups**

Outcome	Group A	Group B	P value
Mortality	8 (16%)	6 (12%)	>0.05
ICU admission	10 (20%)	8 (16%)	>0.05
Mean hospital stay (days)	4.5±1.5	5.7±2.8	>0.05
Readmission	8 (16%)	14 (28%)	<0.05

**DISCUSSION:**

Upper GI bleeding is one of the most frequent causes of mortality in patients with chronic liver disease. Globally 3 to 14% of mortality is documented due to upper gastrointestinal bleeding.<sup>11,12</sup> Many of risk factors and comorbidities were responsible for this life threatening disorder and in cirrhotic patients UGIB was most commonly found cause of mortality.<sup>13</sup>

The present study was conducted with objective to evaluation of clinical outcomes of acute variceal bleeding and non-variceal bleeding in cirrhotic patients. Many of studies has been conducted to examine the mortality rate among AVB patients or NV bleeding in cirrhosis patients. Only few of studies have been conducted to compare the clinical outcomes between variceal and non-variceal.<sup>14,15</sup> In present study we included 100 cirrhotic patients presented with upper GI bleeding from which 68% patients were male while 32% patients were females. The mean age of patients in variceal group was 54.25±8.55 years and in non-variceal group mean age was 59.52±10.25 years (p=0.004). These results showed similarity to some other studies in which male patients population was high 65 to 72% as compared to females with average age of 50 years.<sup>16,17</sup>

In the present study, we found that esophageal varices alone were the most frequent cause of upper GI bleeding in group A patients 34 (68%) followed by esophageal and fundal varices 10 (20%) and

fundal varices 6 (12%). These results were comparable to some other studies in which oesophageal varices were the most frequent etiology of acute variceal bleeding patients.<sup>18,19</sup> In present study we found that in non-variceal bleeding patients gastritis was the most frequent cause 50% followed by esophageal 32%, gastric and duodenal ulcer 6 (12%) and gastric ulcer 3 (6%). A study conducted by Hafez *et al*<sup>20</sup> reported that gastritis was the most common cause of upper GI bleeding.

The mortality was observed in 8 (16%) patients in acute variceal bleeding while 6 (12%) in non-variceal bleeding (p=0.552) in our study. A study conducted by Tandon *et al*<sup>21</sup> reported mortality 15.1% vs 9.3% between AV bleeding and NV bleeding patients. In the present study we found no significant difference regarding ICU admission between both groups 20% vs 16%. No significant difference according to length of hospital stay 4.5±1.5 vs 5.7±2.8 days between both groups. Readmission was significantly high in patients with non-variceal bleeding 28% than variceal bleeding 16%. These results were comparable to some other studies in which there were no significant difference found regarding hospital stay and ICU admission.<sup>22,23</sup>

**CONCLUSION:**

Upper gastrointestinal bleeding in cirrhotic patients is most common malignant disorder which leads to high rate of mortality. It is concluded that there were no significant difference found regarding mortality, length of hospital stay between acute variceal bleeding patients and non-variceal bleeding patients. However, we found significant difference in term of readmission between acute variceal bleeding and non-variceal bleeding patients.

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