

# CIRRHOTIC PATIENTS;

## Incidence, of UGI bleeding factors and esophageal varices

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**ABSTRACT... Objective:** To determine the frequency of upper GI bleeding and its predicting factors and esophageal varices in the patients with liver cirrhosis disease admitted at medicine ward of Isra university hospital. **Design:** Prospective and observational study. **Setting:** Isra university hospital. **Period:** March 2012 to August 2012 (six months). **Methods:** Containing 100 patients, mean age was 45.8, and all the patients with cirrhosis disease were included in this study with liver cirrhosis disease. All patients were under went endoscopy and Frequency of upper GI bleeding and varices presentation and classification according to grade were noted. **Results:** All the 100 patients were selected on the basis of presenting liver cirrhosis disease. Male were more found than the female with the mean age 45.8. Mostly cirrhotic patients were found with HCV positive and upper GI bleeding were noted in (40%) of the cases. With the endoscopic finding mostly patients were noted in II - III grad of esophageal varices and according to child pug classification majority of patients was noted in class "C" In addition, thrombocytopenia and red wale markings along with the presence of large sized varices were associated with the presence of esophageal varices. **Conclusions:** In the conclusion of this study we found majority of the cirrhotic patients with HCV, Esophageal varices and thrombocytopenia are the important factors of upper GI bleeding. Knowledge and etiology of this manuscript may helpful in the prevention of oesophageal varices and upper GI bleeding.

**Key words:** Chronic liver disease, upper GI bleeding, varices.

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### INTRODUCTION

Acute upper gastrointestinal bleeding is the important medical emergencies and remains a major cause of morbidity and mortality<sup>1</sup>, accounting for up to 8% hospital admissions<sup>2</sup>. UGB refers to Gastrointestinal blood loss whose origin is proximal to the ligament of Treitz<sup>3</sup>.

The incedance of UGB is 170 cases per 100,000per year, whereas prevalence of upper gastrointestinal hemorrhage (UGH)varies from 50-150 per year in USA and 100-107 per 100,000 per year in UK<sup>4</sup>. The important causes of upper gastrointestinal bleeding in our country according to locally published studies are esophageal varices, duodenal ulcer, gastric ulcers, gastric erosion, reflux esophagitis, superficial mucosal ulcer, Mallory Weiss tears, Weber rendu syndrome, arteriovenous malformation and neoplasm respectively & in some patients no cause was found<sup>4</sup>. Most important cause of UGB in our setting is EV as compared to peptic ulcer in western countries<sup>5</sup>. The common risk factor of upper GI bleeding are cirrhosis

of liver due to hepatitis B & C, while helicobacter pylori infection, non steroidal anti inflammatory drugs in peptic ulcer<sup>6</sup>.

Variceal bleeding is one of the most serious and life threatening complication in patients with cirrhosis of liver occurs as a result of portal hypertension<sup>7</sup>. Various studies observed that gastroesophageal varices are present in almost half of cirrhotic patients (50–60%) and about one third of these patients will experience an episode of variceal hemorrhage within one year of the diagnosis of esophageal varices<sup>8</sup>.

In the study of the Northern Italian Endoscopic Club (NIEC), six endoscopic parameters were significantly related to variceal bleeding<sup>9</sup>. Two of these parameters were variceal size and location. Larger and more superior varices had a higher bleeding rate. Another endoscopic finding of value in predicting variceal bleeding is the appearance of the vessel wall. The color of varices is thought to predict impending hemorrhage. It has been observed that the endoscopic

finding of "red signs" is related to the variceal bleeding<sup>10</sup>. The "red signs" were found in 85% of large varices with bleeding. The red color signs are the result of microteleangioectasia of the varix. Variants of this sign are red wale marks, which look like whip marks; chery red spots 2mm in diameter; hemocystic spots, which are round, crimson projections larger than 4mm that look like blood blisters; and diffuse redness. "Cherry red spots" were noted to be dilated subepithelial veins. Hematocystic spots represent blood exiting from the deeper esophageal veins into the superficial submucosal veins. The "fundamental" color of the varices is blue or white. All the red color signs and a blue color of one varix are thought to be risk factors for bleeding. The study of NIEC showed that there was a strong correlation between a patient's Child class at the time of endoscopy and the rate of bleeding during the followup<sup>11</sup>. Most of our patients with variceal bleeding were Child's class B followed by patients with Child's class A. Ascites, hyperbilirubinemia, hypoalbuminemia, and high prothrombin time were also factors that significantly increased the risk of variceal bleeding in NIEC study. Stojanvo et al showed no significant differences in the value of cogulation parameters in patients who bled and those who did not<sup>10</sup>. The analysis of relation between the clinical and endoscopic parameters in the NIEC study has shown three variables to have independent prognostic significance for variceal bleeding: Child's class, size of varices, and the presence of red wale markings. These three variables were largely independent of each other, although size of varices and presence of red wale markings appeared somewhat related.

The most effective indicators of risk of early rebleeding are reported to be the parameters that reflect the degree of hepatic dysfunction. These include the presence of ascites, hypoalbuminemia, low prothrombin activity, encephalopathy and hyperbilirubinemia<sup>12</sup>.

## MATERIAL AND METHOD

This study was containing on 100 study participants with the mean of age 48.5. All patients had an established diagnosis of chronic liver disease and were admitted in the Isra university hospital. Risk and benefit of endoscopy was discussed with patients and their relatives and Informed written consent was taken. Routine investigations including hemoglobin, hematocrit, platelets, prothrombin time, serology for hepatitis B and C virus, abdominal ultrasound and therapeutic upper gastro intestinal endoscopy had been carried out.

The clinical and biochemical factors as Child Pugh score, ascites, prothrombin time (PT), total bilirubin, and serum albumin were noted from selected cirrhotic patients. Ultrasonic and endoscopic findings were documented. Data were entered and analyzed in SPSS program version 16.0.

## RESULTS

Total of the 100 patients were included in this study from them (65%) were male and (35%) were female, with the male/female ratio 2.4:1 and mean age was 45.8. Table-I.

Characteristics	Frequency	%
Age (mean)	(45.8)	-
Male / Female	65/35	(65%/35%)
Anti HCV positive	70	(70%)
HBsAg positive	20	(20%)
Both (HCV) and (HBV) positive	10	(10%)
Upper GI bleeding + ve	40	(40%)
Upper GI bleeding - ve	60	(60%)
Child Pug classis A/B/C	(12/34/54)	(12%/34%/54%)
Hemetemesis	47	(47%)

**Table-I. Baseline characteristic of cirrhotic patients with UGB and varices**

Prevalence of liver cirrhosis was in the patients of this study, HCV positive was in (70%), HBV was positive in (20%) and HCV and HBV both were found in (10%). Table-I.

In all of the cirrhotic patients upper GI bleeding was present in (40%) and other (60%) cases were found without bleeding while the hemetesis was occur in (47%) of the cases of this study. Table-I.

According to child classification of this study, (12%) patients were in class A, (34%) in class B and (54%) patients were seen in class C. Table-I.

With the endoscopic findings in the present study esophageal varices were found in (89%) of the patients and were distributed according to grads as, (19%) patients were wit grad (I), (45%) were with grad (II –III) and (25%) patients were seen with esophageal grade (IV). Remaining (11%) cases were noted without esophageal varices. Table-II.

Grands of varices	Frequency	%
I	19	(19.0%)
II - III	45	(45.0%)
IV	25	(25.0%)
Absent	11	(11.0%)

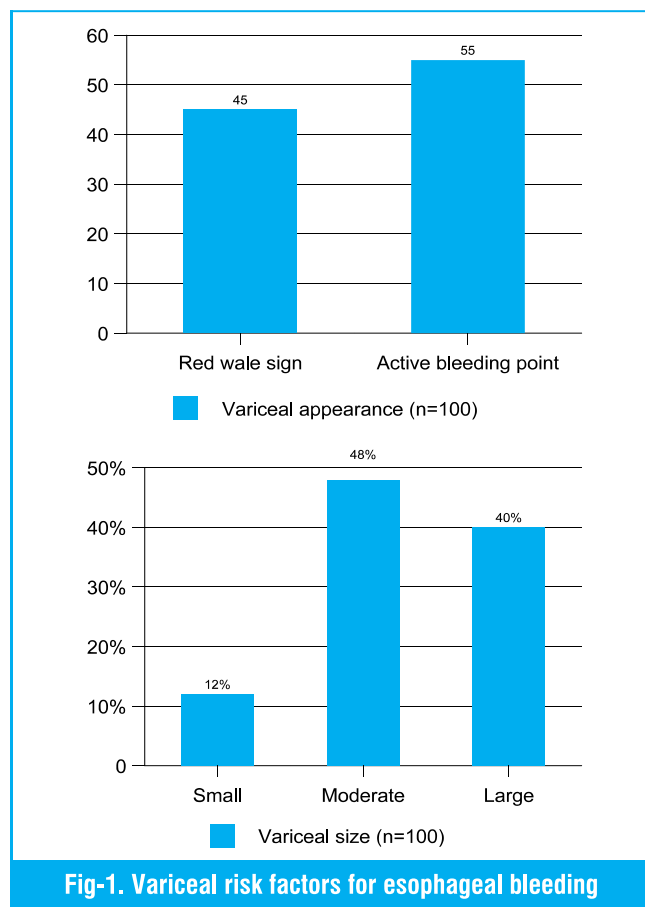
**Table-II. Gradient presentation of varices**

On the basis of ultrasonic findings portal vein diameter was, mean±SD (13.4 ±2) and spenic width was mean±SD (52.5 ±4.9), the frequency and (%) of biochemical and predicting bleeding factors, related with severity of cirrhosis and which are associated with presence of bleeding esophageal varices were shown in Table-III.

According to appearance of variceal bleeding risk factor, (45%) red sign and (55%) patients were noted with active bleeding points and variceal size were

Factors	Mean ± SD
AST (units/L)	75.5±49.2
ALT (units/L)	78.0±56.4
Total billirubin (mg/dl)	2.5±1.3
Alkaline Phosphatase (IU/L)	109.8±70.9
GGT	83.2±14.2
Albumin	3.1±0.6
PT secs	19.8±6.5
Platelet Count	84.5±32.6
Portal vein diameter (> 13 mm)	13.4±2.1
Spleen width (>50 mm)	52.5±4.9

**Table-III. Biochemical factors associate with UGB and varices in cirrhosis patients**



**Fig-1. Variceal risk factors for esophageal bleeding**

noted as (12%) with small size, (48%) with moderate size and (40%) with large size. Figure.1

## DISCUSSION

Upper GIB is important medical emergency and remains a major cause of morbidity and mortality. We found in this study male were in majority than the females, with the ratio 2.4:1. Similar results were found (66%) males and females (34%) in the study of Fook Hong et al<sup>13</sup> in another study reported by Schepis et al male were found (66%) and females were noted (34%)<sup>14</sup>. Mean age were found in this study was 45.8 and in other study Sheikh and associates were found (40.0) mean age in their study<sup>15</sup>.

On the bases of prevalence of cirrhosis disease in our study HCV incidence was high, as HCV was positive in (70%), HBV was found in (20%) and HCV and HBV both were positive in (10%) of patients. Schepis et al, was also reported similar findings<sup>14</sup>.

During endoscopic findings of this study esophageal varices were found in (86%) of the patients and were distributed according to grads, majority of the patients were found in grade (II – III) as, (19%) patients were with grade (I), (45%) were with grade (II–III) and (25%) patients were seen with esophageal variceal grade (IV). Remaining (14%) cases were noted without esophageal varices. A study reported that (76.6%) cirrhotic patients were with esophageal varices and (23.4%) cirrhotic patients were without varices findings<sup>15</sup>. Zaman et al found (68%) patients with esophageal varices<sup>16</sup>.

Out of 100 cases child classification of this study, (30%) patients were in class A, (50%) in class B and (20%) patients were seen in class C. According to Fook Hang et al Child classification in its study were as Child class A was contain (26%), Child class B (55%) and Child class C was contains (19%) of the cases<sup>13</sup>. In another united study Zaman et al reported that patients was (34%) in class A, (51%) in class B and (15%) in

Child class C<sup>16</sup>.

Several studies reported that platelet count may predict the occurrence of esophageal varices in the cirrhotic patients<sup>17</sup>. This study showed that the platelets count was mean±SD (84.5 ±32.6).

Portal vien diameter was found in this study with mean±SD (13.4 ±2.1). It has been reported that the normal mean portal vein diameter in Chinese populations is 9.5 ± 1.3 mm, while it is 11.0 ± 0.3 mm in French populations<sup>18</sup>.

Splenomegaly is documented as one of the diagnostic findings of cirrhosis disease and portal hypertension. Splenic width was noted on ultrasonic findings in this study, mean± SD (52.5 ±4.9). Many studies reported that the splenomegaly is a good predictor of esophageal varices<sup>19</sup>. Lamb et al reported that a good correlation between in vivo ultrasound assessment of splenic width and true splenic volume<sup>20</sup>.

In the present study according to appearance of variceal bleeding risk factor, (45%) red sign and (55%) patients were noted with active bleeding points and variceal size were noted as (12%) with small size, (48%) with moderate size and (40%) with large size. Small esophageal varices were present in (10%) patients, medium esophageal varices in (25%) patients and large esophageal varices were noted (65%) in patients, and the red sign were noted in (85%) in patients with large varices<sup>22</sup>.

## CONCLUSIONS

In the conclusion of this study we found majority of the cirrhotic patients with HCV, Esophageal varices mostly found as complication of hepatitis and the varices performed the very important role in upper GI bleeding, and thrombocytopenia is rare complication and main predicting factor of esophageal bleeding. Knowledge and etiology of his manuscript may helpful in the prevention of oesophageal varices and upper GI bleeding.

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“To be trusted is a greater compliment  
than being loved.”

George MacDonald