

DIABETES AS A PREDICTOR OF MORTALITY IN CIRRHOTIC PATIENTS PRESENTING WITH VARICEAL BLEED

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Abstract;

Background; A major cause of cirrhosis-related morbidity and mortality is the development of variceal bleeding, a direct consequence of portal hypertension. Each episode of active variceal bleeding is associated with 30 percent mortality. This study was planned to determine frequency of variceal bleeding in patients with liver cirrhosis and frequency of in-hospital mortality of these patients in our population. **Objective;** To determine association of diabetes with mortality in patients with liver cirrhosis presenting with of variceal bleed. **Material and Methods;** Consecutive 139 Patient diagnosed with cirrhosis of liver were included in this cross-sectional study from department of Medicine, Nishtar hospital Multan. Complete history and physical examination was assessed to document duration of duration of liver disease, ascites, Hepatic encephalopathy, Previous GI bleed and systemic coagulopathy. All the patients had undergone diagnostic upper GI endoscopic examination to document varices. **Results;** Of these 139 study cases, 77 (55.4 %) were male and 62 (44.6 %) were female. Mean age of our study cases was 45.50 ± 10.81 years. Mean duration of disease (liver cirrhosis) was 3.25 ± 2.32 years. Majority of our study cases i.e. 94 (67.6%) were having liver cirrhosis for the duration of less than 5 years. Child-Pugh class C was more prevalent i.e. 77 (55.4%) of our study cases. Variceal bleeding was observed in 100 (71.9 %) of our study cases. Frequency of diabetes in cirrhotic patients with variceal bleed was 47 (33.81%) and mortality in these diabetics was 26 (55.31%) ($p = 0.001$). **Conclusion;** Diabetes was found to be significantly associated with mortality in cirrhotic patients presenting with variceal bleeding. Healthcare professionals should anticipate adverse outcomes in diabetic patients of liver cirrhosis presenting with variceal bleeding and should educate them regarding glycemic control at early stages of diagnosis.

Keywords; Liver Cirrhosis, Variceal bleeding, Mortality.

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Introduction;

Cirrhosis of liver is one of the most frequently encountered entities in clinical setup all over the world especially in our subcontinent. It is defined as a process of diffuse fibrosis and loss of normal architecture with nodule

formation¹. Most common causes of this chronic hepatic condition are viral hepatitis, alcohol² and metabolic causes like hemochromatosis and Wilson's disease. This alteration in hepatic architecture leads to hepatocyte damage and increased resistance to portal blood flow with increase in portal pressure known as portal hypertension. Portal hypertension is most important pathogenic mechanism for development of major complications of cirrhosis like ascites, variceal bleed, Hepatic encephalopathy and Hepatorenal syndrome³. Increased portal pressure causes opening up of portosystemic shunts on various sites in body, most important of which are at lower esophagus and stomach. These dilated blood vessels, called Esophageal and gastric varices, are most common cause of upper GIT bleeding in cirrhotic patients. About 65% cases of upper GI bleed (UGIB) in cirrhosis are due to esophageal varices⁴. Esophageal varices are present in 40% cases of cirrhosis at time of hospitalization⁵ and are present in 85 % of child class C patients⁶. Variceal bleeding is second most common cause of death in patients with cirrhosis⁷. It carries a 6 week mortality of 10-20%^{8 [10]} and 1 year mortality of 60%⁹. Similar results were obtained by Hearnshaw and others who found mortality despite of modern methods of treatment to be 10 %¹¹.

Cirrhosis therefore is one of the most devastating illness affecting the world and particularly in our country. This study will help us to predict the prevalence of esophageal varices and its outcome in terms of in-hospital mortality.

Material and Methods;

Consecutive 139 Patient diagnosed with cirrhosis of liver irrespective of child Pugh class and duration of disease of either sex less than 70 years were included in this cross-sectional study from department of Medicine, Nishtar hospital Multan were included in the study. Patients admitted and expired due to causes other than cirrhosis of liver, acute liver failure, patients with upper GIT bleed with no varices or signs of portal hypertension on Endoscopy and with Coagulopathy were excluded. Informed consent was taken from each patient. Variceal bleed was defined by presence of: Clinical evidence of upper GI bleed in the form of hematemesis and /or melena which is consistent with endoscopic evidence of esophageal and gastric varices. Complete history and physical examination was assessed to document duration of duration of liver disease, ascites, Hepatic encephalopathy, Previous GI bleed and systemic coagulopathy. All the patients had undergone diagnostic upper GI endoscopic examination to document varices. Data was entered and analyzed using computer program SPSS-16.

Results;

A total of 139 patients with liver cirrhosis meeting inclusion and exclusion criteria of this study were registered. Of these 139 study cases, 77 (55.4 %) were male and 62 (44.6 %) were female. Mean age of our study cases was 45.50 ± 10.81 years (minimum age was 19 years while maximum was 60 years). Study results have also indicated that majority of our cases were in the range of age groups 41 to 60 years i.e. 94 (67.62 %). Mean duration of disease (liver cirrhosis) was 3.25 ± 2.32 years (minimum duration of disease was 1 year while maximum duration of disease was 9 years). Majority of our study cases i.e. 94 (67.6%) were having liver cirrhosis for the duration of less than 5 years. Child-Pugh class C was more prevalent i.e. 77 (55.4%) of our study cases. Variceal bleeding was observed in 100 (71.9 %) of our study cases. Frequency of diabetes in cirrhotic patients with variceal bleed was 47 (33.81%) and mortality in these diabetics was 26 (55.31%). Frequency of mortality was 35 (25.2%) in our study cases with liver cirrhosis while frequency of mortality in patients with variceal bleeding was seen in 31 (31%) of patients i.e. 31/100.

Table No. 1 Association of mortality with diabetes.

Diabetes	Mortality		P-Value
	Yes (n=35)	No (n=104)	
Yes (n=47)	26	21	0.001
No (n=92)	09	83	
Total	139		

Discussion;

Cirrhosis affects 3.6 out of every 1000 adults in North America, and is responsible for over one million days of work loss and 32,000 deaths annually. A major cause of cirrhosis-related morbidity and mortality is the development of variceal bleeding, a direct consequence of portal hypertension¹². Each episode of active variceal bleeding is associated with 30 percent mortality^{13,14}. In addition, survivors of an episode of active bleeding have a 70 percent risk of recurrent hemorrhage within one year of the bleeding episode¹⁵. Variceal bleeding occurs in 25 to 40 percent of patients with cirrhosis¹⁶. Our study registered 139 study cases, 77 (55.4 %) were male and 62 (44.6 %) were female patients having liver cirrhosis. Different authors have reported liver cirrhosis being more common among males than those of females. A study conducted by Sohail et al¹⁷ reported 56.7 % male patients of cirrhosis in their study and 43.3% among females, our study results are close to that of Sohail et al¹⁷. Devrajani et al¹⁸ reported 59.3% male patients with liver cirrhosis and 40.7% female patients which are close to our study results. Two other studies very high frequencies of male patients than females.^{19,20} Mean age of our study cases was 45.50 ± 10.81 years (minimum age was 19 years while maximum was 60 years). Study results have also indicated that majority of our cases were in the range of age groups 41 to 60 years i.e. 94 (67.62 %). Sohail et al¹⁷ reported 46 ± 14 years age of patients having cirrhosis, these findings are close to that of our study results. Sarwar et al reported mean age of cirrhotic patients as 52.57 ± 11.39 years, which is slightly higher than our results.¹⁹ Another study reported 50 years mean age of these patients, which is slightly higher than ours.²⁰

Child-Pugh class C was more prevalent i.e. 77 (55.4%) of our study cases. Similar findings have been observed by Kirge et al²⁰. Variceal bleeding was observed in 100 (71.9 %) of our study cases. Variceal bleeding was significantly associated with that of severity of disease. Similar findings have been reported by Kirge et al²⁰ who also reported variceal bleeding significantly more prevalent among patients with Child-Pugh class C. In our study, overall frequency of mortality was 35 (25.2%) in our study cases with liver cirrhosis. Kirge et al²⁰ reported 20.8 % rate of mortality among cirrhotic patients, these findings are close to that of our study results. Pichilique et al²¹ reported 18.03 % in hospital mortality in patients having liver cirrhosis. Hearnshaw et al¹¹ reported 10% in-hospital mortality in patients having liver cirrhosis, this frequency is lesser than our study

results. Sarwar et al ¹⁹ reported 6.7 % in-hospital mortality among Cirrhotic patients, which is quite less than our study results.

Variceal bleeding is associated with 30 percent mortality rates ^{13, 14} and our study results are also in accordance of these figures as frequency of mortality in patients with variceal bleeding was seen in 31 (31%). In our study variceal bleeding was not significantly related to gender but was significantly more common with increasing age, duration of disease and Child pugh class C (severity of disease).

Conclusion;

Diabetes was found to be significantly associated with mortality in cirrhotic patients presenting with variceal bleeding. Healthcare professionals should anticipate adverse outcomes in diabetic patients of liver cirrhosis presenting with variceal bleeding and should educate them regarding glycemic control at early stages of diagnosis.

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