



CODEN [USA]: IAJPBB

ISSN: 2349-7750

## INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

<http://doi.org/10.5281/zenodo.1704508>

**Available online at:** <http://www.iajps.com>

**Research Article**

### STUDY TO KNOW THE PREVALENCE AND ETIOLOGY OF ESOPHAGEAL VARICES AMONG LIVER CIRRHOSIS PATIENTS

**\*Dr. Muhammad Said Nawaz, \*Dr.Kalsoom Bibi**

**\*Sir Ganga Ram Hospital, Lahore**

**Abstract:**

**Objective:** To determine the cause and frequency of esophageal varices in patients with liver cirrhosis

**Study Design:** A cross-sectional study.

**Location and Duration:** In Unit-III of Medicine Department of Sir Ganga Ram Hospital, Lahore for six months duration from March 2015 to september 2015.

**Methods:** The study included 200 patients with liver cirrhosis. Based on past history, clinical examination and biochemical parameters, patients were classified according to the Child Pugh classification as A, B and C. Each patient was then administered an esophagogastroduodenoscopy (EGD) for its presence and classification of esophageal varices.

**Results:** Out Of200 patients, 79 (39.5%) were female and 121 (60.5%) were male. The mean age  $\pm$  standard deviation was  $46.79 \pm 7.59$  years and the mean  $\pm$  standard deviation time of disease was  $31.18 \pm 29.72$  months. The majority of the patients were 182 (91%) HCV ve+, 10 (5%) HBV +ve, 6 (3%) HCV and HBV co-infections and 2 (1%) alcoholics. In the classification of children, 89 (44.5%) were class A, 71 (35.5%) were class B and 40 (20%) were class C. There were varicose veins in 141 patients in A and varicose veins in 59 patients in B. Of the 141 varicose veins, 30 had small varicose veins, 71 had intermediate varicose veins and 40 had large varicose veins.

**Conclusion:** Hepatitis C is the most common cause of liver cirrhosis. Men are more affected than women. Most of the patients have class A childpugh and most of the patients with liver cirrhosis have middle sized varices.

**Key words:** Hepatitis C, liver cirrhosis, esophageal varices.

**Corresponding author:**

**Dr. Muhammad Said Nawaz**

*Sir Ganga Ram Hospital, Lahore*

**QR code**



Please cite this article in press Muhammad Said Nawaz., *Study to Know the Prevalence and Etiology of Esophageal Varices among Liver Cirrhosis Patients.*, Indo Am. J. P. Sci, 2018; 05(12).

**INTRODUCTION:**

Cirrhosis of the liver is histopathologically defined as hepatic parenchymal fibrosis. It is the final stage of a complex hepatocyte lesion process that produces liver cirrhosis, partial degeneration and hepatic fibrosis. In the past, cirrhosis of the liver is thought to be irreversible, but now it can be reversed after the discontinuation of alcohol in alcoholic cirrhosis of the liver. In the initial stages, elimination of the causes of cirrhosis of the liver, cirrhosis is reversible, and likewise the reversal of fibrosis after successful treatment of hemochromatosis. The incidence of liver disease worldwide is 5% to 10%. The incidence of cirrhosis varies from one country to another and from one region to another. In countries where alcohol consumption is more common, the incidence of alcoholic cirrhosis is high. Hepatotoxic viruses are the main cause of cirrhosis. Viral Cause of Cirrhosis is 50.3% and alcoholic cirrhosis is 39.5%. Damage that leads to the activation of star cells in hepatic parenchyma also calls for secreting the transforming growth factor-B1 (TGF-B1) which leads to fibrotic response and proliferation of connective tissue myofibroblasts. The equilibrium between matrix metalloproteinase and metalloproteinase (TMP1-2) natural tissue inhibitor is changed; causing the formation of scar tissue, connective tissue with the matrix replaces normal liver tissue. The presence of hepatocyte nodules in scar tissue and regeneration

prevents portal blood circulation causing portal hypertension. Complications of liver cirrhosis include hepatorenal syndrome HRS, portal hypertension, portosystemic collateral vessels, esophageal varices, spontaneous bacterial peritonitis and hepatic encephalopathy. Esophageal varices are the second cause of death in cirrhotic patients. The prevalence of esophageal varice is higher in decompensated cirrhosis patients and 60% higher than patients with compensated cirrhosis. In patients with liver cirrhosis, the prognosis of the disease can be assessed by classifying patients according to the Child Pugh classification. This study was carried out to determine the most common cause of liver cirrhosis and the prevalence of esophageal varices in Pakistan.

**MATERIALS AND METHOD:**

This cross-sectional study was conducted in the *Unit-III of Medicine Department of Sir Ganga Ram Hospital, Lahore* for six months duration from March 2015 to September 2015. 200 patients with liver cirrhosis selected through convenient sampling. Regardless of the cause of liver cirrhosis, diagnosed patients were selected from 20 to 60 years of age. A detailed history was made and a clinical examination was performed according to inclusion and exclusion criteria. The patients were classified as A, B and C according to Child Pugh classification (Table 1).

**Table 1: Child-Pugh score<sup>7</sup>**

<b>Measure</b>	<b>1 point</b>	<b>2 points</b>	<b>3 points</b>	<b>Units</b>
Bilirubin (total)	<34 (<2)	34-50 (2-3)	>50(>3)	µmol/l (mg/dL)
Serum albumin	>35	28-35	<28	mg/L
INR	<1.7	1.71-2.20	> 2.20	no unit
Ascites	None	Suppressed with medication	Refractory	no unit
Hepatic encephalopathy	None	Grade I-II (or suppressed with medication)	Grade III-IV (or refractory)	no unit

<b>Points</b>	<b>Class</b>	<b>Life expectancy</b>	<b>Mortality</b>
5-6	A	15-20	10%
7-9	B	Candidate for transplant	30%
10-15	C	1-3 months	82%

All patients underwent upper gastrointestinal endoscopy with Gastroscope after 12 hours. Four groups were formed in the endoscopic findings; Group I patients without varicose veins, group II with small varicose veins, moderate varicose vein in group III and large varicose vein in group IV (Table 2).

**Table 2. Guideline for Diagnosing Esophageal Varices<sup>8</sup>**

1. A screening esophagogastroduodenoscopy (EGD) for the diagnosis of esophageal and gastric varices is recommended when a diagnosis of cirrhosis has been made		
2. Surveillance endoscopies are recommended on the basis of the level of cirrhosis, presence and size of the varices:		
<i>Patients with and Repeat EGD</i>		
Compensated cirrhosis	No varices Small varices	Every 2-3 years Every 1-2 years
Decompensated cirrhosis	-	Yearly intervals
3. Progression of gastrointestinal varices can be determined on the basis of the size classification at the time of EGD. In practice, the recommendations for medium-sized varices in the three-size classification are the same as for large varices in the two-size classification:		
<i>Size of varix</i>	<i>Two-size classification</i>	<i>Three-size classification</i>
Small	<5 mm	Minimally elevated veins above the esophageal mucosal surface
Medium		Tortuous veins occupying less than one-third of esophageal lumen
Large	>5 mm	Occupying more than one-third of the esophageal lumen

Data were entered and analyzed with SPSS 17.0. Mean  $\pm$  SD was provided for normally distributed quantitative variables. The frequencies and percentages for qualitative variables are given.

## RESULTS:

200 patients with liver cirrhosis were included. There were 79 females (39.5%) and 121 males (60.5%). The mean age  $\pm$  standard deviation of the patients was  $46.79 \pm 7.59$  years. Mean  $\pm$  SD duration of the disease. The patients were  $31.18 \pm 29.72$  months. Hepatitis C was present in 182 patients with 91%. Patients with combined hepatitis B and hepatitis C were 3 to 6%. Patients with hepatitis B were 10%. Alcoholic patients were 1 to 2%. In Child Pugh class A, 89 patients (44.5%), in Child Pugh B 71 (35.5%) and in Child Pugh C (20%) were 40 patients. The patients without varicose veins were 59, but 141 patients had esophageal varices. Thirty patients had small varicose veins, 71 had medium sized esophageal varices and 40 had large variceal veins.

Table 3. Baseline characteristics of the patients with liver cirrhosis (n=200)

Characteristics of patient	Liver cirrhotic pts
Male	121 (60.5%)
Female	79 (39.5%)
Age (years)	46.79±7.59
Duration of disease (months)	31.18±29.72
Etiology	
HCV	182(91%)
HBV	10(5%)
HBV,HCV	6 (3%)
Alcoholic	2 (1%)
Child pugh class	
A	89(44.5%)
B	71(35.5%)
C	40(20%)
Esophageal varices	
No varices	59
Varices present	141
Small varices	30
Medium varices	71
Large varices	40

#### DISCUSSION:

The prevalence of chronic liver cirrhosis in Pakistan is increasing rapidly. It is the most common cause of morbidity and mortality. Gastrointestinal bleeding from varicose veins in cirrhotic liver patients is the most common complication causing death. The finding of this study is that HCV is the most common cause of cirrhosis of the liver is consistent with these studies and 14 million people are hepatitis C patients. In Pakistan HCV is the most common cause of cirrhosis of liver in 182 patients out of 200 patients studied, ie 91%. HBV showed 10 (5%) and co-infection with HBV patients and HCV was 6 (3%), and with alcohol only 2 (1%). The prognosis of the disease reported in many studies was that according to the Child-Pugh classification and the results were significantly longer life expectancy of child pugh Class A compared to the patients in classes B and C. Child pugh class A patients was a 89 '(44.5%), class B' patient 71 (35.5%) and the childpugh class 'C' were 40 (20%).complying with a previousestudy reporting 37% of Chlidpugh class A. According to endoscopy, the classification of esophageal varices in patients who have been assessed for the presence or absence of varicose veins was also carried out to assess the progression of esophageal varices. Cirrhosis is the most advanced form of liver disease. Variceal bleeding is one of the most lethal complications of cirrhosis. When esophageal varices are formed, the risk of bleeding is between 20% and

35% in 2 years. In patients with the first episode of bleeding, the mortality rate was 17% to 57%, and those who survived after the first episode of variceal bleeding, the risk of recurrent bleeding is 66% in the first 6 months of untreated patients. Greater the likelihood of bleeding in cirrhotic patients with large varicose veins. Preventive efforts will be attained to identify patients with large varicose veins. In 1997, American Gastroenterology Redemption recommended endoscopic screening for patients with liver cirrhosis. In addition, the American Society for the Study of Liver Disease in 1998 suggested endoscopy screening for portal hypertension (collaterals of portal veins in the abdominal image to detect class A,B and class C varicose veins, especially when patients with large evidence of thrombocytopenia). Prophylactic treatment will reduce the incidence of bleeding and decrease the mortality rate if large varices are treated immediately after detection. In this study, the vast majority of patients, ie, 141 of 200 patients, had varicose veins and only 59 had no varicose veins. According to the classification of esophageal varices veins, medium-sized esophageal varices veins present in 71, this may be due to a different sample of the population, which is the most common among all patients with variceal veins, small variceal veins in 30 patients and large varices in 40 patients who contradict some previous studies.

**CONCLUSION:**

Hepatitis C is the most common cause of cirrhosis and most of the patients have been concluded that mostly medium sized varices and child pugh class A seen in liver cirrhosis patients.

**REFERENCES:**

1. Petta S, Sebastiani G, Bugianesi E, Viganò M, Wong VW, Berzigotti A, Fracanzani AL, Anstee Q, Marra F, Barbara M, Calvaruso V. Noninvasive prediction of esophageal varices by liver stiffness measurement and platelet values in patients with liver cirrhosis due to nonalcoholic fatty liver disease: A multicenter cross-sectional study. *Digestive and Liver Disease*. 2018 Feb 28;50(1):3-4.
2. Maimone S, Saffioti F, Filomia R, Caccamo G, Saitta C, Pallio S, Consolo P, Sabatini S, Sitajolo K, Franzè MS, Cacciola I. Elective endoscopic variceal ligation is not a risk factor for bacterial infection in patients with liver cirrhosis. *Digestive and Liver Disease*. 2018 Apr 1;50(4):366-9.
3. Watanabe K, Hikichi T, Takagi T, Suzuki R, Nakamura J, Sugimoto M, Kikuchi H, Konno N, Takasumi M, Sato Y, Hashimoto M. Propofol is a more effective and safer sedative agent than midazolam in endoscopic injection sclerotherapy for esophageal varices in patients with liver cirrhosis: a randomized controlled trial. *Fukushima journal of medical science*. 2018.
4. Ellakany, Walid Ismail, K. MoheyEldin Mahmoud, Pietro Invernizzi, A. ElKady Mahmoud, H. Fathy Abou Elkheir Eldin, R. Haleem Abo Elwafa Abdel, and Ahmed Ellakany. "Study of the influence of heme oxygenase 1 gene single nucleotide polymorphism (rs2071746) on esophageal varices among patients with cirrhosis." *European journal of gastroenterology & hepatology* (2018).
5. Bellan, M., Sainaghi, P.P., Minh, M.T., Minisini, R., Molinari, L., Baldighi, M., Salmi, L., Barbaglia, M.N., Castello, L.M., Ravani, P. and Avanzi, G.C., 2018. Gas6 as a predictor of esophageal varices in patients affected by hepatitis C virus related-chronic liver disease. *Biomarkers in medicine*, 12(1), pp.27-34.
6. Szczepanik AB, Pieliaciński K, Oses-Szczepanik AM, Huszcza S, Misiak A, Dąbrowski WP, Gajda S. Sclerotherapy of esophageal varices in hemophilia patients with liver cirrhosis-a prospective, controlled clinical study. *Polski przeglad chirurgiczny*. 2018 Feb;90(1):29-34.
7. Chalasani N, Garcia-Tsao G, Goodman Z, Lawitz E, Abdelmalek M, Rinella M, Ryan M, Noureddin M, Jue C, Pyko M, Allgood A. A multicenter, randomized, double-blind, PLB-controlled trial of Galectin-3 inhibitor (GR-MD-02) in patients with NASH cirrhosis and portal hypertension. *Journal of Hepatology*. 2018 Apr 30;68:S100-1.
8. Karatzas, Andreas, Christos Konstantakis, Ioanna Aggeletopoulou, Christina Kalogeropoulou, Konstantinos Thomopoulos, and Christos Triantos. "Non-invasive screening for esophageal varices in patients with liver cirrhosis." *Annals of gastroenterology* 31, no. 3 (2018): 305.
9. Sagar, M.K., Sriram, V., Priya, V.H., Ramanarasimham, V. and Behera, K.L., 2018. PLATELET COUNT/SPLEEN DIAMETER RATIO AND AST/ALT RATIO AS NON INVASIVE PARAMETERS FOR THE DETECTION OF ESOPHAGEAL VARICES IN PATIENTS WITH LIVER CIRRHOSIS. *PARIPEX-INDIAN JOURNAL OF RESEARCH*, 7(9).
10. Goldberg, Jason F., Craig L. Jensen, Rajesh Krishnamurthy, Nidhy P. Varghese, and Henri Justino. "Pulmonary vein stenosis with collateralization via esophageal varices: Long-term follow-up after successful treatment with drug-eluting stent." *Congenital heart disease* 13, no. 1 (2018): 124-130.
11. Colecchia, Antonio, Federico Ravaioli, Giovanni Marasco, Agostino Colli, Elton Dajti, Anna Rita Di Biase, Maria Letizia Bacchi Reggiani, Annalisa Berzigotti, Massimo Pinzani, and Davide Festi. "A combined model based on spleen stiffness measurement and Baveno VI criteria to rule out high-risk varices in advanced chronic liver disease." *Journal of hepatology* (2018).
12. Lu, H-S., C-W. Su, M-C. Hou, P-H. Chen, P-C. Lee, W-Y. Kao, T-I. Huo, Y-H. Huang, H-C. Lin, and J-C. Wu. "The effect of primary prophylaxis therapy for large esophageal varices in patients with hepatocellular carcinoma." *Journal of Hepatology* 68 (2018): S713.
13. Tavano, D., Palma, R., Di Gregorio, V., Panetta, C., Lattanzi, B., D'Ambrosio, D., Raniolo, M., Incicco, S., Antoniozzi, A., Pontone, S. and Lamazza, A., 2018. P. 06.28 PREDICTIVE FACTORS FOR THE ERADICATION OF ESOPHAGEAL VARICES IN CIRRHTIC PATIENT UNDERGOING ENDOSCOPIC BAND LIGATION. *Digestive and Liver Disease*, 50(2), p.e191.
14. Kang, S. H., M. Y. Kim, Y. O. Jang, M. Lee, B.

- G. Jun, T-S. Kim, K. T. Suk, and S. K. Baik. "Performance of shear-wave elastography to detect high-risk esophageal varices in cirrhosis is improved by spleen stiffness estimation." *Journal of Hepatology* 68 (2018): S642.
15. Swidnicka-Siergiejko, Agnieszka, Urszula Wereszczynska-Siemiatkowska, Andrzej Siemiatkowski, Justyna Wasielica-Berger, Jacek Janica, Barbara Mroczko, and Andrzej Dabrowski. "The imbalance of peripheral interleukin-18 and transforming growth factor- $\beta$ 1 levels in patients with cirrhosis and esophageal varices." *Cytokine* (2018).