INTERNATIONAL JOURNAL OF CURRENT ADVANCED RESEARCH
ISSN: O: 2319-6475, ISSN: P: 2319-6505, Impact Factor: 6.614
Available Online at www.journalijcar.org
Volume 12; Issue 12; December 2023 Page No.2715-2719
DOI: http://dx.doi.org/10.24327/ijcar.2719.1592

Research Article

A CROSS SECTIONAL STUDY ON PREDICTING GRADE OF ESOPHAGEAL VARICES IN CIRRHOTIC PATIENTS

Shirish kumar patewar[1], R Nagamani[2], and Kranthi[3]

[1]Postgraduate, Mallareddy Medical College for Women
[2]Professor, Head of the Department, General Medicine, Mallareddy Medical College for Women
[3]Associate Professor, Department of General Medicine, Mallareddy Medical College for Women

A R T I C L E I N F O

Article History:
Received 12th November, 2023
Received in revised form 25th November, 2023
Accepted 11th December, 2023
Published online 28th December, 2023

Keywords:
Esophageal varices, Platelet count, Cirrhosis, Endoscopy.

A B S T R A C T

Background: Variceal bleeding accounts for 10-30% of all cases of upper gastrointestinal bleeding. Upper Gastro Intestinal Endoscopy is used to screen all cirrhotic patients at diagnosis for identification of varices at a high risk of bleeding with is invasive and costly. There are certain non-invasive techniques available to predict development of oesophageal varices. The objective of the study was to study the role of platelet count, splenic size in predicting the esophageal varices in cirrhotic patients. **Materials & Methods:** A cross sectional study was conducted in the department of General Medicine for a period of one year from November 2022 - October 2023. 50 patients who were admitted with cirrhotic liver disease, who underwent Upper Gastro Intestinal Endoscopy were included in the study. **Results:** The mean age of study participants was 60.32 ± 9.48 years with male predominance. Lower platelet count, higher values of Serum bilirubin, Serum Albumin, Prothromin Time, Spleen size were significantly associated with oesophageal varices. **Conclusion:** Lower platelet count was significantly associated with higher grade of oesophageal varices.

INTRODUCTION

Esophageal varices are porto-systemic collaterals and they form as a consequence of portal hypertension (a progressive complication of cirrhosis), preferentially in the sub mucosa of the lower esophagus. Rupture and bleeding from esophageal varices are major complications of portal hypertension and are associated with a high mortality rate.[1] Variceal bleeding accounts for 10-30% of all cases of upper gastrointestinal bleeding.[2]

Most cirrhotic patients will develop esophageal varices over their life time (5 to 15% / year) and the annual rate of esophageal hemorrhage is 5 to 15%. [3,4]The frequency of esophageal varices varies from 30% to 70% in patients with cirrhosis and 9-36% of patients have what are known as -high-riskvarices. Esophageal varices develop in patients with cirrhosis at an annual rate of 5- 8% but the varices are large enough to pose a risk of bleeding in only 1-2% of cases. The progression from small to large varices is 8% per year. Approximately 30% of patients with esophageal varices will bleed within the first year after diagnosis. Despite improved diagnosis and treatment for variceal hemorrhage, the mortality rate still remains high (20%-35%). The presence of gastro esophageal varices correlates with the severity of liver disease. The most important predictor of variceal bleeding is the size of esophageal varices. Larger the esophageal varices, the more dangerous they are,since large esophageal varices may cause a higher tension on variceal walls.Thus, identication of large-sizedesophageal varices, before their first bleeding, is essential to prevent or minimize this life-threatening complication of liver cirrhosis.

Current guidelines recommend using upper gastrointestinal endoscopy (UGIE) to screen all cirrhotic patients at diagnosis for identification of varices at a high risk of bleeding. But UGIE also has its own limitations [5] as it is invasive and cannot be done frequently as it is associated with increased health care costs.[6]

There are certain non-invasive techniques available to predict development of oesophageal varices. The noninvasive predictive variables include platelet count, Child Pugh, albumin level, albumin globulin ratio AST/platelet ratio index[APRI], bilirubin level, serum transaminases, hamoglobin level, total counts, platelet count/spleen diameter ratio, prothrombin time, spleen size, portal vein diameter, splenic diameter, ascites.[7] The common features of these noninvasive means that prediction of esophageal varices is reproducible, cost effective, simple and quick with no additional burden to patients but with accuracy inferior to UGIE.

Corresponding author:* **Shirish kumar patewar
Postgraduate,Mallareddy Medical College for Women

Objective

1. To study the roles of platelet count, splenic size in predicting the esophageal varices in cirrhotic patients.

MATERIALS & METHODS

A cross sectional study was conducted in the department of General Medicine for a period of one year from November 2022 - October 2023. 50 patients who were admitted with cirrhotic liver disease, who underwent Upper Gastro Intestinal Endoscopy were included in the study. The patients who had other disorders affecting platelets, who were not willing to participate in the study were excluded from the study.

The data was collected using a pre tested semi structure questionnaire which had all the details including demographic data, present clinical features, past history, history of alcoholism. The investigations done were complete blood picture, Sr. albumin, Sr. creatinine, Prothrombin time and Sr. Bilerubin.

Esophageal varices, based on the findings of UGIE were graded as small - grade I/II, large - grade III/IV for ease during the study Data was entered using Microsoft excel and analysed using Epi info 7.2.1.0. Descriptive and inferential statistical analysis were used in the present study. Results on continuous measurements were presented on Mean±SD (Min-Max) and results on categorical measurements were presented in Number (%). Significance was assessed at 5% level of significance. Student t-test is used to compare inter group variation for continuous variables. Chi square test is used to compare inter group variation for categorical variables.

RESULTS

The mean age of study participants was 60.32 ± 9.48 years.

Parameter	Sub parameter	Frequency	Percentage
Gender	Male	41	82
	Female	9	18
Etiology	Alcohol	31	62
	HBV	7	14
	HCV	3	6
	Alcohol + HBV	2	4
	Alcohol + HCV	2	4
	Idiopathic	5	10
Child Pugh Score	Class A	24	48
	Class B	12	24
	Class C	14	28
Ascites	Nil	14	28
	Mild	15	30
	Moderate	13	26
	Massive	8	16
Varices	Grade I/II	28	56
	Grade III/IV	22	44

Figure showing gender distribution

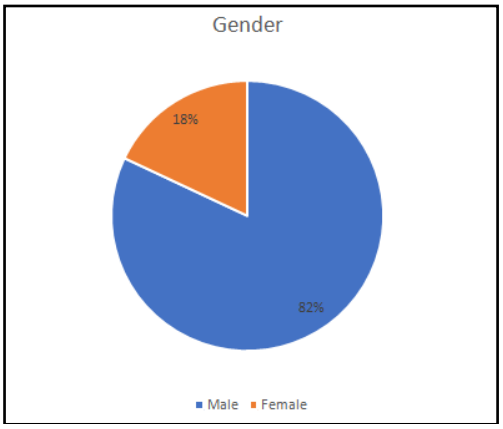


Figure showing the etiology

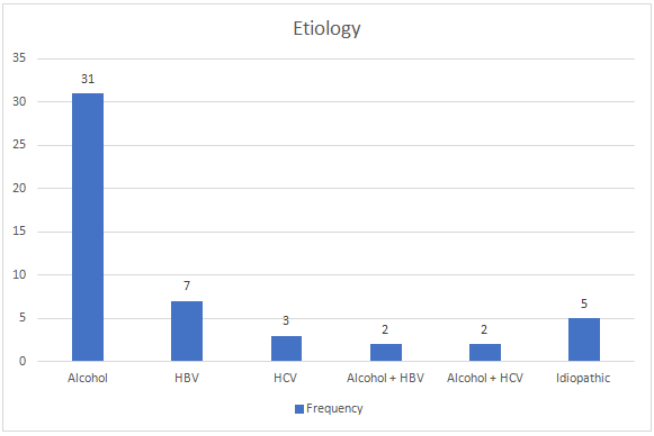
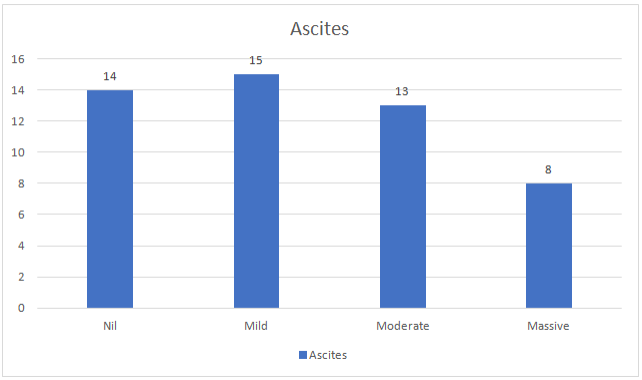


Figure showing the Child Pugh score



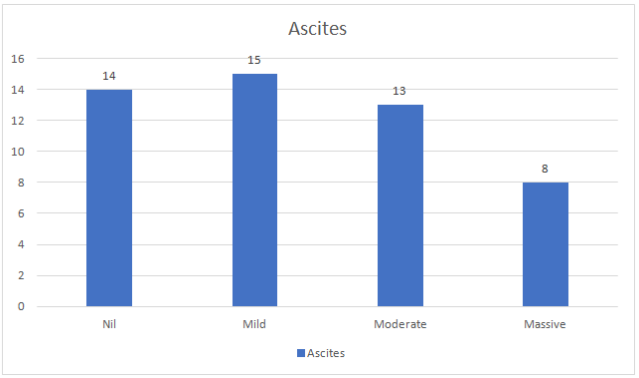


Figure showing the varices

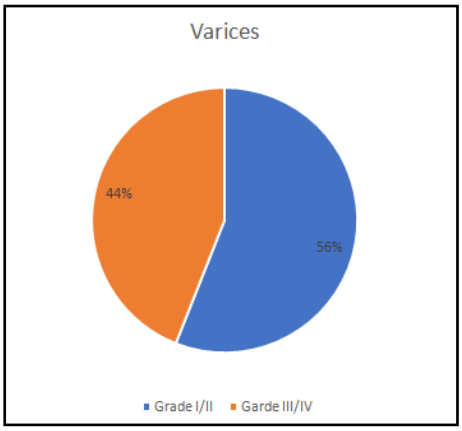


Table showing the predictors of esophageal varices

Parameter	Varices grade	Mean ± SD	P value
Platelet count	Grade I/II	198456 ± 94268	<0.00001
	Grade III/IV	89756 ± 64298	
Sr.Bilerubin	Grade I/II	1.2±0.9	<0.00001
	Grade III/IV	2.6 ± 1.4	
Sr.Albumin	Grade I/II	3.89 ± 1.2	<0.00001
	Grade III/IV	2.1 ± 0.9	
Prothrombin Time in sec	Grade I/II	1.98 ± 1.6	<0.00001
	Grade III/IV	4.95 ± 1.89	
Spleen size in mm	Grade I/II	142.25 ± 74.7	<0.00001
	Grade III/IV	198.56 ± 101.8	

Child Pugh Score as predictor of varices

Child Pugh Score	Grade I/II	Grade III/IV	P value
Class A	21	3	0.00003445
Class B	5	7	
Class C	2	12	
Total	28	22	

DISCUSSION

Large esophageal varices are a dangerous clinical consequence of liver cirrhosis. Since variceal screening causes considerable endoscopic burden and cost, seeking a less expensive, non-invasive means for accurate prediction of large esophageal varices has great clinical importance. Several studies in the past have shown independent parameters like splenomegaly, ascites, spider naevi, Child's grade,platelet count, prothrombin time/activity, portal vein diameter, platelet count/ spleen diameter ratio, serum albumin, and serum bilirubin as significant predictors for the presence of esophageal varices.

The findings of the present study are consistent with the following studies

Author/Parameter	Age	Gender
Present study	60.32 ± 9.48 years.	82% were males
Uong P *et al* [2023] [8].,	55 ± 11 years.	67% were males
Afsar A *et al* [2021] [9].,	59.89 ± 9.01 years	55.5% were males
Ozdil K *et al* [2016] [10].,	59.51±12.75 years	66.7% were males

Non-invasive predictors of Varices

Author/Parameter	Platelet count	Other predictors
Present study	Significantly associated - <0.00001	Serum bilirubin, Serum Albumin, Bilerubin, Prothromin Time, Spleen size is significantly associated.
Uong P *et al* [2023] [8].,	Significantly associated - <0.00001	Not calculated
Afsar A *et al* [2021] [9].,	Significantly associated - <0.0001	Not calculated
Ozdil K *et al* [2016] [10].,	Not significantly associated - P:0.18	Not calculated

Lower platelet count, higher values of Serum bilirubin, Serum Albumin, Bilerubin, Prothromin Time and greater spleen size were significantly associated with higher grades of varices.

Conclusion:

The present study concluded that low platelet count is significant predictor of esophageal varices with P value of <0.0001. Other non invasive predictors included are Serum bilirubin, Serum Albumin, Bilerubin, Prothromin Time, Spleen size.

Conflicts of Interest: None

Source of funding: Nil

Reference

1. Tsochatzis EA, Bosch J, Burroughs AK: Liver cirrhosis. Lancet. 2014; 383 (9930):1749-61. 10.1016/S0140-6736(14)60121-5
2. Ashkenazi E, Kovalev Y, Zuckerman E: Evaluation and treatment of esophageal varices in the cirrhotic patient. Isr Med Assoc J. 2013; 15(2):109-15.
3. Meseeha M, Attia M: Esophageal varices. In: StatPearls. Treasure Island (FL): StatPearls Publishing;2020
4. Gulamhusein AF, Kamath PS: The epidemiology and pathogenesis of gastrointestinal varices. Techniques in Gastrointestinal Endoscopy. 2017; 19(2):62-68.
5. Chiodi D, Hernández N, Saona G, et al.: [Noninvasive diagnosis of esophageal varices in cirrhotic patients]. Acta Gastroenterol Latinoam. 2014; 44(2):108-13.

6. Rye K, Scott R, Mortimore G, et al.: Towards Noninvasive Detection of Oesophageal Varices. Int J Hepatol. 2012; 2012:343591.
7. Cherian JV, Deepak N, Ponnusamy RP, et al.: Non-invasive Predictors of Esophageal Varices. Saudi J Gastroenterol. 2011; 17(1):64-68.
8. Uong P , Chey V , UnnK , Nov N , Kang K , UnS , Kaing K, Khuon V , NyT , Mon P , Kann S , Chhit D , Um S , Chhay K, Sou S. Correlation of Platelet Count with Grading of Esophageal Varices in Cirrhotic Patients. *Open Journal of Gastroenterology*, 2013; 13, 12-27.
9. Afsar A, Nadeem M, Shah SAA, Hussain H, Rani A, Ghaffar S. Platelet count can predict the grade of esophageal varices in cirrhotic patients: a cross-sectional study. F1000Res. 2021 Nov 24; 10:101.
10. Ozdil K, Ozturk O, Calık ES, Akbas ES, Kanat E, Calıskan Z, Demirdag H, Kahraman R, Bulur A, Bilgic NM, Doganay L, Sokmen HM. Relationship between size of varices and platelet count/spleen size ratio in cirrhotic patients. North Clin Istanb. 2016 Jun 7; 3(1):46-52.

How to cite this article:
Shirish kumar patewar, R Nagamani, and Kranthi, (2024). "A Cross Sectional Study on Predicting Grade of Esophageal Varices In Cirrhotic Patients". *International Journal of Current Advanced Research*.12 (12), pp.2715-2719

****