



CORRELATION OF APRI SCORE WITH ESOPHAGEAL VARICES IN LIVER CIRRHOSIS

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ABSTRACT **INTRODUCTION:** Esophageal varices is the common complication of liver cirrhosis. Bleeding from Esophageal varices increases the mortality and morbidity in cirrhotic patients. So screening of esophageal varices is essential in cirrhotic patients. Endoscopy is the gold standard method for screening and grading of esophageal varices. But endoscopy carries certain risks for patients and it is also a semi-invasive, expensive and uncomfortable procedure. Thus, there is a need to develop non-invasive methods to evaluate esophageal varices. Accordingly, APRI score has been developed for assessing esophageal varices.

METHOD: This study was conducted in patients with liver cirrhosis who underwent endoscopy over a period of 18 months during 2019-2020 in the department of gastroenterology, Kurnool medical college, Kurnool, Andhra Pradesh. 50 patients of liver cirrhosis were enrolled for the study. Grading of esophageal varices was done by endoscopy, simultaneously APRI score was also calculated.

RESULT: In this study, there was a positive correlation between esophageal varices and APRI score (P-value < 0.001). APRI score > 1.65 demonstrated large varices with sensitivity and specificity of 81.8% and 87.2% respectively.

CONCLUSION: APRI score can indirectly predict the presence of esophageal varices in liver cirrhosis.

KEYWORDS : APRI score, esophageal varices, cirrhosis

INTRODUCTION :

Liver cirrhosis is the end stage of chronic liver disease which is characterized by presence of portal hypertension and its related complications. Esophageal varices is the common complication of portal hypertension which is present in 40% of patients with cirrhosis and 60% of patients with cirrhosis and ascites.¹ In cirrhotic patients who do not have esophageal varices at initial endoscopy, new varices will develop at a rate of approximately 5% per year and in patients with small varices at initial endoscopy, progression to large varices occurs at a rate of approximately 10% per year.² Up to 25% of patients with newly diagnosed esophageal varices will experience variceal bleeding within 2 years and bleeding from esophageal varices increases the mortality and morbidity in cirrhotic patients. The risk of death associated with acute variceal bleeding is 5% to 8% at 1 week and about 20% at 6 weeks.² The best clinical predictor of bleeding is size of esophageal varices.³ So screening of esophageal varices is essential in cirrhotic patients to anticipate the bleeding. Endoscopy is the gold standard method for screening and grading of esophageal varices but endoscopy carries certain risks for patients and it is also a semi-invasive, expensive and uncomfortable procedure. Thus, there is a need to develop non-invasive methods to evaluate esophageal varices. Some experts have been developed several non-invasive markers such as serum markers, transient elastography. APRI score is one of the serum markers that can be used to predict the presence of esophageal varices. APRI score can be obtained from the calculation of two laboratory parameters, aspartate aminotransferase (AST) and platelet count.

METHOD:

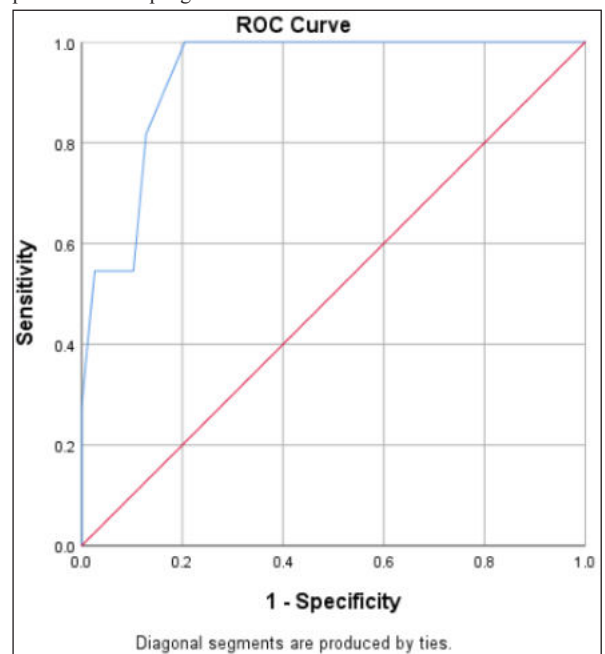
This study was conducted in patients with liver cirrhosis who underwent endoscopy over a period of 18 months during 2019-2020 in the department of gastroenterology, Kurnool medical college, Kurnool, Andhra Pradesh. 50 patients of liver cirrhosis were enrolled for the study. Grading of esophageal varices was done by endoscopy, simultaneously APRI score was also calculated. APRI score is an index ratio of two laboratory parameter, AST and platelet count. APRI score is calculated by an equation as follows: $AST (IU/L) / \text{upper normal limit} \times 100 / \text{platelet count} (10^9/L)$. The statistical analysis was done with the help of SPSS 10.0 Window. The correlation was assessed with spearman' Rho coefficient and Receiver operator characteristic curve (ROC).

RESULT:

The study included 50 patients with liver cirrhosis (30 male and 20 female). There were 27 (54%) patients without varices , 12 (24%)

patients with small varices and 11 (22%) patients with large varices. On correlation of esophageal varices with APRI score by spearman's Rho coefficient, our study concluded that variceal grade correlate positively with APRI score (P-value <0.001). APRI score > 1.65 demonstrated large varices with sensitivity and specificity of 81.8% and 87.2% respectively.

Receiver operator characteristic curve (ROC) for APRI score as a predictor for esophageal varices :



Receiver operator characteristic curve (ROC) shows that APRI score can be an accurate predictor of large varices with a good area under curve (AUC) value 0.93.

DISCUSSION:

Esophageal varices is one of the most common complication of liver cirrhosis with portal hypertension. Assessment of esophageal varices is essential in cirrhotic patients because bleeding from varices is the

common cause of death in these patients. Assessment of esophageal varices grade can be done indirectly by identifying liver fibrosis. There are several methods that can be used to assess liver fibrosis indirectly by using serum markers such as fibro test, hyaluronic acid, Fom index, Lok index, FIB4 index, APRI score etc.⁴

Several studies have been done and they show APRI score can be used to depict hepatic fibrosis. Shaheen et al reported the identification of hepatic fibrosis in patients with chronic hepatitis C virus infection, APRI score < 0.5 had negative predictive value of 72%, while APRI score > 1.5 had a positive predictive value of 87%.⁵ Wai CT et al concluded that APRI score predict significant fibrosis and cirrhosis in 51% and 81% respectively, potentially avoiding the need for liver biopsy in patients.⁶

A study on the non-invasive parameters to predict the presence of esophageal varices is very important in order to avoid the endoscopy procedure which is a semi-invasive, expensive and less convenient procedure.

In our study, most common age group was 51-60 years comprising 38% of total patients and 60% patients were male.

In our study, on correlation of esophageal varices with APRI score by spearman's Rho coefficient, we found that variceal grade correlate positively with APRI score (P-value <0.001). APRI score > 1.65 demonstrated large varices with sensitivity and specificity of 81.8% and 87.2% respectively. Receiver operator characteristic curve (ROC) shows that APRI score can be an accurate predictor of large varices with a good area under curve (AUC) value 0.93.

The results of our study are similar to previous study results, which shows a correlation between APRI score and esophageal varices. Tafarel et al examined 300 patients of liver cirrhosis and he also got a positive correlation between APRI score and presence of esophageal varices (p <0.05).⁷

CONCLUSION:

There is a positive correlation between APRI score and the grade of esophageal varices. APRI score can be used an indirectly predictor of the presence of esophageal varices in liver cirrhosis patients.

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