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Retrospective Study

# Correlation Between Radiological and Biological Signs of Portal Hypertension and the Presence of Esophageal Varices During Cirrhosis

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## Abstract

Portal hypertension is by definition an increase in pressure in the portal venous territory > 15 mmHg or a pressure gradient between the portal trunk and the IVC > 5 mmHg.

It is due to an obstruction in the portal-systemic circulation that may be suprahepatic, intrahepatic, or infrahepatic.

Our study mainly focuses on intrahepatic causes which is led by cirrhosis.

The etiologies were dominated by viral Hepatitis essentially Hepatitis B and C viruses.

The main consequence of portal hypertension is the development of collateral circulation, including esophageal varices which is the most frequent and dangerous complication.

The usual way to diagnose and screen for esophageal varices is upper gastrointestinal endoscopy, however endoscopy can be considered invasive.

We report a retrospective study of 42 cases of cirrhosis with portal hypertension as a result of their complications.

***Keywords:*** *Portal Hypertension; Cirrhosis; Thrombopenia; Splenomegaly; Esophageal Varices; Upper Gastrointestinal Endoscopy*

## Introduction

Unlike upper GI endoscopy, which is not routinely performed in all cirrhotic patients, abdominal ultrasonography and biological work-up are indicated to look for indirect signs of cirrhosis.

## Aim of the Study

The aim of our work is to evaluate the correlation between endoscopic data and radiological and clinical data during portal hypertension in patients diagnosed of cirrhosis.

## Patients and Methods

This is a retrospective descriptive and analytical study spread over 3 years from January 2018 to June 2021 in our department.

We collected all patients with cirrhosis diagnosed with clinical, biological and radiological criteria and we recorded and processed the data on SPSS software to look for the correlation between radiological and biological signs of portal hypertension and the presence of esophageal varices during cirrhosis.

## Results

Among the 42 patients collected.

The mean age was 62.9 ± 14.7 [31 - 87] years. The sex ratio was M/F was 2 (14 women and 28 men). Cirrhosis was classified as Child C in 19 (45.2%) patients, Child B in 15 (35.7%) patients, Child A in 8 (19%) patients. The etiologies were dominated by viral hepatitis B [9 (21.7%) cases] and viral hepatitis C [9 (21.7%) cases] thrombocytopenia (< 150000) was present in 39 patients (92.3%) of cases.

Oeso-Gastro-Duodenal endoscopy was performed in all patients, showing esophageal varices in 90.5% of cases. Abdominal ultrasound revealed splenomegaly in 26 (63.4%) cases. A dilated portal trunk (> 12 mm) in 22 (52.4%) of cases.

The analytical study showed a significant correlation between the dilation of the portal trunk and the presence of esophageal varices ($p = 0.04$). Similarly, there was a correlation between the presence of thrombocytopenia and the presence of esophageal varices ($p < 0.001$).

On the other hand, the presence of splenomegaly was not significantly correlated with the occurrence of VO.

## Discussion

The main consequence of portal hypertension is the development of collateral circulation, including esophageal varices which is the most frequent and dangerous complication.

The usual way to diagnose and screen for esophageal varices is upper gastrointestinal endoscopy, however endoscopy can be considered invasive. In recent years in cirrhosis, the main objective is the non-invasive diagnosis of fibrosis or cirrhosis, which can be obtained by a combination of clinical signs, biochemical data.

Several studies agree with our results, including a meta-analysis performed in Japan by Shibata., *et al*. [1] and a study performed in India by Manatsathit., *et al*. [2] with a sensitivity and specificity of prediction of esophageal varices respectively of (61.5% and 89%) and (87.88% and 88.89%).

A study performed in the United States showed a positive predictive value of VO a (0.797; 95% CI: 0.774-0.820) by Lee., *et al* [3].

Another meta-analysis including 49 studies was done by Chen., *et al*. [4] who reported that the sensitivity of PSR for all varicose veins was 84% and for high-risk varicose veins 78%.

A low platelet count is the most common laboratory indicator of portal hypertension, splenomegaly is also a sensitive but nonspecific sign of portal hypertension.

## Conclusion

In our study, the radiological sign correlated with the presence of esophageal varices was dilatation of the portal trunk and the biological sign was thrombopenia. However, splenomegaly was not correlated with the presence of esophageal varices.

## Bibliography

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