

# Comparative Study among Globulin-Platelet (GP) Model, Aspartate to Platelet Ratio Index (APRI) and Fibrosis Index Based on Factor 4 (FIB-4) To Predict Fibrosis and Cirrhosis in Chronic Hepatitis B Patients with Mildly Elevated Alanine Aminotransferase Level (ALT)

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## ABSTRACT

**Background:** Stages of liver fibrosis is an important factor in determining prognosis and need for treatment in patients with chronic HBV infection.

**Objectives:** This study aimed to evaluate the diagnostic performance of Globulin-Platelet (GP) model against Aspartate to Platelet ratio index (APRI) and the Fibrosis index based on 4 factors (FIB-4) for predicting liver fibrosis and cirrhosis in CHB patients with mildly elevated alanine aminotransferase (ALT) levels.

**Materials and Methods:** An observational cross sectional study was carried out in the Department of Hepatology, Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh from February 2017 to February 2019. 287 were included in the study. Transient elastography (fibroscan) of liver was done from a single center. After obtaining all the reports, scorings were calculated and compared with the stages of fibrosis. All data were analyzed by SPSS (version 23). The diagnostic performance of GP model, APRI and FIB-4 were evaluated by the area under receiver operating characteristic curve (AUROC).

**Result:** Among 287 CHB patients, the mean age was  $28.6 \pm 9.1$  years. The mean HBV DNA PCR (log<sub>10</sub>) was found  $5.97 \pm 1.6$  (IU/ml). Of all patients, 119 (41.5%) patients had significant fibrosis and among them 49 (17.1%) had severe fibrosis (F4) or cirrhosis. To predict significant fibrosis, at a cutoff value of 1.37, the AUROC of GP was lower than APRI (0.827 vs 0.897) and almost equivalent to FIB-4 (0.827 vs 0.826), with 82.4% sensitivity and 75% specificity. To predict severe fibrosis or cirrhosis, at cutoff value of 1.49, the AUROC of GP was higher than APRI (0.914 vs 0.903) and FIB-4 (0.914 vs 0.830), with a high (100%) sensitivity but moderate (76.5%) specificity. Conclusion: GP model has less diagnostic accuracy in comparison to APRI for assessment of significant fibrosis but equivalent to FIB-4. To predict severe fibrosis or cirrhosis GP model has higher diagnostic accuracy than APRI and FIB-4 in CHB patients with mildly elevated ALT levels.

## BIOGRAPHY

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