Compare the Efficacy of Aspartate Aminotransferase to Platelet Index (APRI) and FIB-4 with Transient Elastography: FibroScan in Patients with Chronic Hepatitis C

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ABSTRACT
Objective: Compare the efficacy of aspartate aminotransferase in patients with chronic hepatitis with fibro scan to platelet index and FIB-4 with transient elastography.

Study Design: Cross-sectional study.

Place & Duration of Study: Department of Medicine, Azhra Naheed Medical College, Lahore from 1st May 2020 to 31st October 2020.

Methodology: Eleven hundred and fifty patients of both sexes were enrolled. Demographic patients after written consent have been registered. Both patients had a detailed history, clinical review and investigations designed to rule out misunderstanding and partiality in the findings of the research. The diagnosis was perfectly performed for continuing hepatitis C infection, which included various biochemical tests. We contrasted the efficiency of the readily available aspartate aminotransferase with the FIB-4 with fibro scan and platelet index for distinguishing progression of hepatitis C virus fibrosis.

Results: Mean age of the patients was 39.14±14.68 years with mean BMI 22.68±9.14kg/m2. Seven hundred and thirty (63.5%) were females and 420 (36.5%) were males. Almost 70% of the HCV patients were on stage F0-F1 and 6.5% of the patients were in F2 stage and 15.7%, 16.97% of the patients were in F3 and F4. No significant difference was observed regarding mortality rate with p value <0.05.

Conclusion: Aspartate aminotransferase/platelet index and FIB4 are expected to reliably separate cirrhotic and non-cirrhotic stages from the expensive and unusual fibro scan rating of HCV infected patients.

Keywords: Hepatitis C, Fibrosis, Liver, Aspartate aminotransferase (AST)

INTRODUCTION
World Health Organization study of 2017 indicates an alarming situation in Pakistan and ranked number two in hepatitis infections.1,2 Statistics of 2018 surveys reports that, approximately 18M and 9M Pakistanis are infected with hepatitis B and hepatitis C virus. We typically have HCV.3 HCV is normal. It spreads through many paths, primarily through contact with vertical transmission, sexual contact, blood transfusions, needle stick wounds and as well as through IV medications.4

In tradition, liver biopsy was a gold standard for fibroid staging5, but it is an invasive procedure requiring professional workforce handling which provides patients with discomfort and substantial costs. In addition, there could be internal bleeding. There is also a problem of inconsistency in liver biopsy scoring between observers’ inability to track development, and a sampling error of up to 30%.6 Cirrhosis eventually leads to the start of many decompensating events which lead to decompensated liver disease.8 The procedure is an invasive procedure which is susceptible to intra- and interobserver variations and sampling errors.9,10 The use of liver biopsy has rapidly decreased for treating hepatitis viral patients, along with effective virological tools for genotyping and for the determination of virus loads and new antiviral medications. In addition to the assessing of hepatic fibrosis, non-invasive approaches can be used to evaluate whether to treat or postpone antiviral therapy, track the patients’ reaction to treatment and progression of disease and determine the prognosis. Hepatology has been advanced by the development of inaccessible methods in the last 10years to assess liver fibrosis. Hepatology has developed 12. We analyse strategies for assessing liver fibrosis without invasion and address its advantages and drawbacks in the treatment of viral hepatitis B or C patients.

MATERIALS AND METHODS
This cross-sectional study was carried out at Azhra Naheed Medical College, Lahore and comprised of 1150 cases. Detailed information of all the patients including age, sex, body mass index were recorded after taking written consent. Patients who had any chronic liver disease or found any symptoms of liver cancer and those did not give any written consent were excluded. Chronic HCV infection patients who had only been positive for hepatocellular cancer which was detected by PCR and then sent for HCV-genotyping visiting Lahore’s General Hospital, Lahore were included in present study. The research did not involve patients co-infected with HBV/HCV and HCV/HIV who had any clinical results on liver cancer. During this time, a total of 1898 patients were involved. Viral load which was obtained by PCR and biochemical analytes (LFTs), albumins, bilirubin and CBC were quantitatively measure for liver stiffness index. The patients’ fibrosis phases have been calculated by Metavir Method from the FibroScan score. If IQR/medium value was < 30 percent, then we found FibroScan results accurate. We have taken 10 FibroScan readings and have seen the average FibroScan value of those readings. Ziol-transient-elastography break points were used: FibroScan 2.5-8.8 are marked as F0-F1; FibroScan, F2 as 8.9-9.6, F3 as 9.7-14.6 and F4 as 14.6 and F4 as >14.6. FibroScan is marketed as F3. The serum FIs available were checked for the patients F1, API, AAR, FIB-4, FCI, APRI, Pohl and our newly-drawn up NFI. The data was entered and analyzed through SPSS-25.

RESULTS
The mean age of the patients was 39.14±14.68 years and mean BMI was 22.68±9.14kg/m². Ratio of females were 730 (63.5%) greater than that of males 420 (36.5%) males patients (Table 1). The deciding of the fibrous stage between HCV patients reveals that of 1150 patients 700 (60.9%) were fibrotized in stage F0-F1, of which 75 (6.5%) were F2, of which 180 (15.7%) were patients in stage F3 and 195 [16.97%] (Table 2). Eight hundred and fifty five (74.3%) patients were genotype 3a, 270 (23.5%) were 1b and 25 (2.17%) were genotyped 1A (Table 3). The sensitivity, specificity and cutoff points have been determined to validate APRI serum AST platelet ratios and Fibrosis 4 (Table 4)
predict cirrhosis and advanced stages of fibrosis, as in obesity patients.\textsuperscript{20}

**CONCLUSION**

FIB-4 and AST-to-Platelet Index (APRI) are expected to reliably separate cirrhotic and non-cirrhotic stages from the expensive and unusual Fibro scan rating of HCV infected patients.

**REFERENCES**

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