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Research Article

**STUDY TO FIND OUT THE CHANCES OF OESOPHAGEAL  
VARICES IN HCV PATIENTS ON THE BASIS OF FIBRO SCAN  
SCORING SYSTEM**<sup>1</sup>Muhammad Majid Kanwar, <sup>2</sup>Dr.Muhammad Kashif, <sup>3</sup> Dr.Javeria Shoukat<sup>1</sup>Shifa Tameer E Millat University, Islamabad<sup>2</sup>Quaid E Azam Medical College, bwp<sup>3</sup>Allama Iqbal Medical College, Lahore**Abstract:**

**Objective:** To envisage the chance of esophageal varices in HCV patients on the basis of fibro scan scoring system. **Study Design:** Cross sectional study.

**Place and Length of Study:** This study was directed at Victoria Hospital Bwp from March 2015 to jan 2016.

**Materials and Methods:** The number of patients with chronic liver disease with HCV was 87 who were registered. They were assessed for the treatment of chronic viral hepatitis C. The record was collected and agreements were taken on a pre-set proforma. Abdominal ultrasound, fibro scan and upper endoscopy and laboratory investigation was done with all patients. The entire fibro scan was completed by single department and all the upper endoscopies were done by same gastroenterologist. The record was evaluated on SPSS version 15. **Results:** All the patients were suffered fibro scan. They were divided into two groups on the basis of their score of fibro scan of 8Kpa low score into group I and group II with high score. Upper endoscopy was experienced by all patients and the outcomes were also divided into two groups, one with patients who had varices and second with patients who had not. The total number of patients was 87 which include 55 males and 32 females. The score of fibro scan was divides into two groups. Group I contained patients was less than 8Kpa and group II had patients with more than 8 Kpa. According to this group I had 57 and group II had 30. The result of upper endoscopy was also divided into two groups and there were only one case of early varices in group I whereas group II had 28 cases of esophageal varices. **Conclusion:** It is concluded that in order to predict possible esophageal varices, a good non-invasive technique is fibro scan.

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**INTRODUCTION:**

The chronicity [1] of hepatitis follow after a severe infection is 70-75% cases. Chronic infection may follow in those who have normal levels of aminotransferase levels after an acute infection. Only 20-25% patients will progress to cirrhosis with chronic hepatitis. In asymptomatic patients who have no history of severe hepatitis C infection, hepatitis C is initially identified most of the times, they either have a life insurance laboratory test, or donate blood, or experienced diagnosis for an elective operation or an antenatal visit. About 33% patients of hepatitis C have usual aminotransferase levels. The development of hepatitis C is almost more than 75% and it depends upon the time of illness, HIV infection, older age, comorbidity, fatness, increased iron load, and other hepatitis virus like B and D and alcohol ingestion.

The chronic liver disease is endemic disease in Pakistan due to hepatitis C. It is almost 5-7% of the total population. These factors of its vast spread are the low literacy rate, poverty, unhygienic living style, mal practise and fewer resources. The consequence of the virus was two its impact on liver so lead to cirrhosis. The destruction of synthetic liver function on one side and the viability of the virus to continue the disease process. To investigate the patient and to monitor the treatment success is also very expensive which is far away from the range of a common person. As the disease become chronic so that the complication are also on the rise. The close follow up is mandatory in every case. The problem arises from the element of fibrosis that replaced the normal parenchyma of liver and there is now fibrosis that will lead to increase the portal hypertension on one side and decreased the synthetic function of liver on the other side. There are chances of cirrhosis and its complications like esophageal varices. Previously liver biopsy was done in every as it is risky, expensive, time consuming and little bit of variable results. With the advancement it was restricted to some special and difficult cases.

Fibroscan [2-4] it is a very new test and confidently comment on the fibrosis of liver and now liver biopsy was almost replaced with advance technique fibro scan. Fibro scan [5] or elastography is a non-invasive test to measure liver inflammation and fibrosis. The score then converts on metavir scale to find a stage. In metavir grading system there are two numbers one is grade to indicate the degree of inflammation and the other is stage that showed the degree of fibrosis [6,7]. A four-point grading system starting from A0 no inflammation, A1 mild inflammation, A2 moderate inflammation and A3 severe inflammation. While a five-point scale is for grading the fibrosis starting from F0 no fibrosis, F1 minimal fibrosis, F2

fibrosis involve the blood vessel of liver, F3 fibrosis involve the other areas of liver and F4 advanced fibrosis or cirrhosis. The fibro scan scan results in KPacan be converted into metavir scale of F1-F4. The higher scale like F3-F4 showed higher fibrosis and cirrhosis<sup>8 9 10</sup>. It is the test that measure liver inflammation and fibrosis comparable to liver biopsy. It is FDA approved. The result of fibro scan in a patient if it is more than 14 KPa it is 90% probability of having cirrhosis and if more than 7 KPa then it showed more than 85% of having significant fibrosis.

In this particular study we decide to do fibro scan and upper G.I. endoscopies in every case to see the result and with the help of metavir scale we decide to predict the probable esophageal varices [11,12] and with the endoscopy we confirm it.

**MATERIALS AND METHODS:**

This is a cross sectional study and directed in Victoria Hospital Bwp. The study was done for a year from Sep 2013 to Aug 2014. All the patients were grown-up and had informed agreement. Total 87 patients of chronic liver disease with HCV were registered. They were assessed for the treatment of chronic viral hepatitis C. History and complete examination was taken in every case and the record was collected on a stated proforma. All patients had done with abdominal ultrasound, fibro scan and upper endoscopy and laboratory investigations like Blood CP, UCE, LFT, PT, INR, serum Albumin and their BMI. All the fibro scan were done by single department of Hospital and all the upper endoscopies were performed by same gastroenterologist in a private set-up. The data was examined on SPSS version 15.

**Inclusion Criteria:**

1. Age more than 18 years
2. Treatment Naïve patients
3. BMI < 28
4. No history of upper GI bleed, Hepatoma and ascites.

**Exclusion Criteria:**

1. Age less than 12 years
2. Had taken treatment
3. History of Esophageal Varices
4. Patients with cirrhosis

**RESULTS:**

There were total 87 cases which include 55 males and 32 females. The average age was  $29 \pm 11$ . Males were little more than females. Statistics of patients is shown in Table No. 1. All the patients experienced fibro scan and divided into two groups according to

their score of fibro scan, patients with low score were placed in group I and patients with high score were placed in group II. The cut value is 8Kpa. Shown in Table No. 2. All the results were in Kilopascal (Kpa). It ranges from 3 to 75 Kpa. The result of less than 8 Kpa was consistent with F1-2 and it is 57 cases (65.5%) and the Fibroscan score of 8-11 Kpa in F3 were in 24 cases (27.5%), while F4 greater than 11 Kpa and it is 6 cases (6.89%). All patients experienced upper endoscopy and the result were also divided into two groups those who had varices and those who had not was shown in Table No 3. In group I there were only one cases of early varices whereas 23 patients were show small esophageal varices and 05 had large esophageal varices in group II.

**Table No. 1: Patient characteristics**

	Group I	Group II
Male	37	18
Female	20	12
Age	24 + 7	33+ 3
BMI	23 + 3	26 + 2
Hemoglobin	10.6+ 3	9.4+ 2.5
Total leucocyte count	10X <sup>3</sup> +3x <sup>3</sup>	5X <sup>3</sup> + 2X <sup>3</sup>
Platelets count	100000+5000	65000 +3000
SGPT	57 + 13	88 + 17
SGOT	27 + 7	45 + 9
Serum albumin	3.3+ 0.9	2.7 + 0.5
INR	1.2 + 0.1	1.4 + 0.4

**Table No 2: Fibroscan Finding**

Total patients	Group I (F 1-2)	Group II (F 3-4)
F1	33	0
F2	24	0
F3	0	24
F4	0	6

**Table No 3: Endoscopic Finding**

Total No of Patient	Group I	Group II
No varices	56	02
Small Varices	01	23
Large Varices	00	5

32% in total and 93% in group II having high fibro scan score were with esophageal varices. Laboratory tests like blood complete picture, prothrombin time, serum albumin and ultra sound abdomen were done in all patients. The platelet count were low, the albumin was low and prothrombin time was prolong among group II patients while near normal in Group I patients. The ultrasound finding of the abdomen was also significant in group II patient. There was splenomegaly, coarse echo texture in every case of

group II while three cases had ascites.

### DISCUSSION:

Chronic liver disease is endemic disease in our part of the world. Hepatitis C virus is the leading cause of chronic liver disease in Pakistan. It is almost affect from 5-7 % of the population in Pakistan. The overall treatment and management of these patients is a burden on society. As we are a poor country, less health care resources and low literacy rate so we don't follow the case as it required, we pick the cases either on screening for job or they presented with complications. Patients with chronic liver disease can present with upper gastrointestinal bleeding because of a complication of cirrhosis. For the reason it is mandatory to investigate every case of chronic hepatitis C in detail. To pick upper G.I. bleeding complication early we need an upper G.I. endoscopy in every case. The endoscopes and the skill are not available in every centre. It creates an extraordinary burden on the team in particular and on health system in general. So it is better to do some test that will predict the possibility of esophageal varices in particular cases and it should be less invasive, easy to perform and better availability and has comparable results. For the purpose we need a test that calculate the liver stiffness and predict about the complications like esophageal varices and it is done by fibro scan the transient elastography. Yasmin Saad et al [13] emphasized on fibro scan to pick early the complications like esophageal varices. It records the value in Kpa and it is divided into staging from F1 to F4 depending upon the score. The fibroscan [14,15] had negative and positive predictive values for the diagnosis of esophageal varices were 95% and 94% respectively. Al Hamoudi [16] et al were showed same result and highly recommended fibro scan to predict early esophageal varices the cut value according to the Metavir scale was 8Kpa in our study. It is a good and reliable test to predict esophageal varices but it cannot describe the extent or grade of varices. In this study the patient with high fibro scan score had more chances of having esophageal varices simultaneously the platelets count, serum albumin and INR were also de-arranged. And the endoscopies were positive in 93 % of cases in group II.

Previously the liver biopsy was carried out in cases where we want to have a histological assessment and grade of fibrosis. The liver biopsy [17] is still a gold standard but the fibro scan had almost replaced it. Similar results were also found by many of the authors [18,19] 83.5 sensitivity in diagnosing small esophageal varices. The procedure was easy to perform and had better results. It was all the Kilopascal value that would decide what were is the

future prospects. It could not clearly describe the extent of the varices but with the disease progression<sup>20</sup> the complications were on a rise.

### CONCLUSION:

It is strongly recommended that fibro scan can predict the possibility of esophageal varices in patients with chronic hepatitis C infection.

**Conflict of Interest:** The study has no conflict of interest to state by any writer.

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