

## RELATIONSHIP BETWEEN CLINICAL AND PATHOLOGIC FINDINGS IN PATIENTS WITH CHRONIC LIVER DISEASES

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### ABSTRACT

**Objective:** To explore the relationship between clinical findings of patients with chronic liver diseases and the pathologic grading and staging of liver tissues.

**Study Design:** Non interventional comparative cross sectional study.

**Place and Duration of study:** The study was conducted in Military Hospital (MH) Rawalpindi for duration of 06 months.

**Methods:** The inflammatory activity and fibrosis of consecutive liver biopsies from 100 patients were determined according to the diagnostic criteria of chronic hepatitis. A comparative analysis was carried out for 100 patients with chronic liver diseases by comparing their clinical manifestations with the grading and staging of liver tissues.

**Results:** It was revealed that age, index of clinical symptoms and physical signs were obviously relevant to the pathologic grading and staging of liver tissues ( $P < 0.05$ ).

**Conclusion:** There is a good correlation between clinical findings and the pathologic grading and staging of liver tissues, which may give aid to the noninvasive diagnosis of liver fibrosis.

**Keywords:** Chronic Liver Disease, Hepatitis B, Hepatitis C, Cirrhosis

### INTRODUCTION

Chronic liver disease is an ailment in which hepatic inflammation and necrosis continues for at least six months. Chronic liver disease is worldwide in distribution. Liver fibrosis is mainly caused by Hepatitis B and C viral infections and alcohol consumption<sup>1</sup>. It is characterized by an accumulation of interstitial collagens and the matrix components. Chronic liver diseases usually develop into liver cirrhosis through the phase of liver fibrosis. In recent years researchers have been making efforts to study the non invasive diagnostic methods of liver fibrosis<sup>2</sup>. Liver biopsy is done to assess the severity of hepatic damage in chronic liver disease which is an invasive procedure, has some contraindications and mortality rate of 0.05% as well<sup>3</sup>. Through the world there are vast number of the patients of chronic liver disease<sup>4</sup>. The number is growing day by day especially in the third world countries<sup>5</sup>. A study was conducted at MH Rawalpindi to determine relationship between clinical findings and pathologic grading and staging of liver tissues. It was a prospective non

interventional study. 100 cases of chronic liver diseases were studied to determine correlation between clinical and pathologic findings including inflammatory grading and fibrosis, so that in future many patients would not need this invasive procedure before start of antiviral therapy.

### MATERIALS AND METHODS

Non interventional comparative cross sectional study was carried out in medical department MH Rawalpindi for 06 months. One hundred patients was selected by non-probability purposive technique. Both males and females of all age groups were included who were HBV and HCV infection positive and were not getting any treatment.

Clinical symptoms were divided in to mild and severe symptoms. Mild symptoms included fatigue, loss of appetite, nausea and aches in hepatic region. Severe symptoms included gingival bleeding and variceal bleeding including haematemesis and malaena. According to different symptoms it was scored as under:

- 0: No symptoms.
- 1: With one of the of mild symptoms.
- 2: With one of the mild to severe symptoms.
- 3: With one the of severe symptoms.

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≥ 4. More than one kind of severe symptoms.

It was further divided into three grades according to the total score including Mild:0-1, Moderate:2-3, Severe≥4.

**Signs:** On the absence or presence of hepatosplenomegaly the patients were divided into two groups; one with no hepato / splenomegaly and the other with hepato/splenomegaly.

**Data Collection Procedure**

All persons included in this study were military personnel and their families reporting to MH Rawalpindi for chronic liver diseases. All patients were evaluated for their clinical features firstly and then they were subjected to liver biopsy. Patients were divided into six different groups on the basis of signs and symptoms<sup>6</sup>. These groups included:

1. Mild without hepato/splenomegaly
2. Mild with hepato/splenomegaly
3. Moderate without hepato/splenomegaly
4. Moderate with hepato/splenomegaly
5. Severe without hepato/splenomegaly
6. Severe with hepato/splenomegaly

On the other hand investigations including different serum biochemical markers and liver tissue for histopathological grading and staging were sent to the Pathology Department of MH Rawalpindi and Armed Forces Institute of Pathology, Rawalpindi .

**Data Analysis**

All the data analysis was carried out in programme SPSS version 10. Descriptive statistics were used to describe the data. Chi-

square test was used to check the association of clinical features with inflammatory grade and stage of chronic liver disease. P value <0.05 was considered as significant.

**RESULTS**

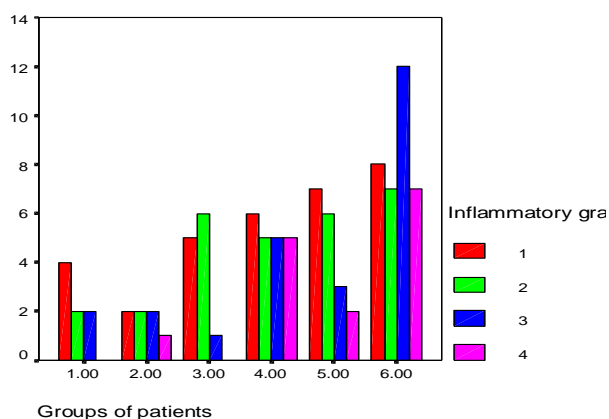
One hundred patients were included in our study. The mean age of the patients included in the study was 27.57 year (SD=0.08). The minimum age was 16 years and the maximum was 39 years. 85% of the patients included in the study were males and 15% were females. All the patients included in study were divided into six groups based upon their clinical features. There were 8 patients in group 1, 7 patients in group 2, 12 patients in group 3, 21 patients in group 4, 18 patients in group 5 and 34 patients in group 6. Different patients groups and their inflammatory grade and fibrotic score are given below in table-1, fig.1 and fig.2.

**DISCUSSION**

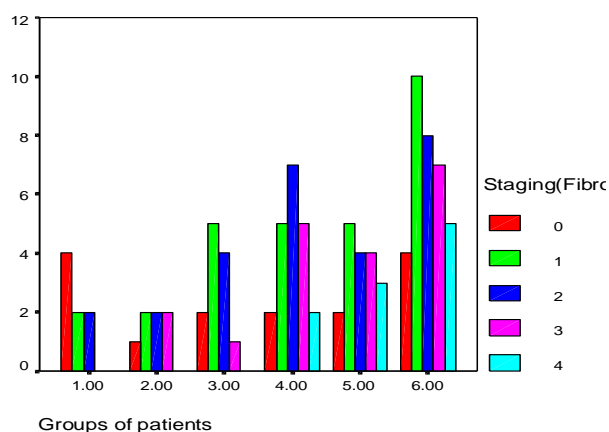
Chronic liver disease is a disease that has been studied in great details. Throughout the World there are vast number of the patients of chronic liver disease<sup>7</sup>. This number is growing day by day especially in the third world countries<sup>8</sup>. This disease has been very rightly called the “viral bomb”. The course of the disease is very lengthy and variable and the consequences are very difficult to deal with. Chronic liver disease may lead to cirrhosis of the liver further leading to portal hypertension and, ultimately, life threatening complications such as massive GI haemorrhage, pancytopenia, spontaneous bacterial peritonitis, electrolyte imbalances, encephalopathy & bed-riddance

**Table: Showing significant relationship between the severity of the clinical features of the degree of inflammatory grading (p=0.047) and fibrosis (p=0.035)**

S No	Groups	Inflammatory Grading				Staging				
		1	2	3	4	0	1	2	3	4
1	0-1 + no hepatosplenomegaly	4	2	2	0	4	2	2	0	0
2	0-1 + hepatosplenomegaly	3	3	1	0	1	3	2	1	0
3	2-3 + no hepatosplenomegaly	4	5	2	1	2	3	6	1	0
4	2-3 + hepatosplenomegaly	4	5	6	6	1	3	9	5	3
5	≥4 + no hepatosplenomegaly	2	3	6	7	1	3	4	5	5
6	≥4 + hepatosplenomegaly	2	6	12	14	3	5	6	9	11
P value		0.047				0.035				



**Fig. 1: Relation between clinical features and corresponding inflammatory grades.**



**Fig.2: Relationship between clinical features and their corresponding fibrotic activity.**

and these complications causes many admissions in the hospital and therapeutic procedures including liver transplants<sup>9,10</sup>. The treatment of the hepatitis C is very expensive and also lengthy. This makes it much more needed to study the various aspects of the disease to make it more understandable. The various aspects of chronic liver disease has been studied in depth in worldwide.

Individuals with chronic HBV infection are at an increase risk of developing end-stage liver disease including cirrhosis, hepatic failure and HCC. It was recently been estimated that about 53% of HCC cases in the world are related to HBV infection. The life time risk developing HCC is increasing even in patient with cleared HBsAg or occult HBV infection. Further risk factors include chronic HCV infection, exposure to aflatoxin B1. Alcohol abuse, obesity and diabetes. Thus, it is important to identify HBV-

infected patients at a higher risk of progressing to HCC.

In our study the relationship between clinical features and the inflammatory grading and staging of liver tissues was carried out. In this study we took 82 patients of viral hepatitis C and 18 patients of viral hepatitis B but no statistical difference was found between them, however the conclusion needs to be verified by larger sample studies. We estimated the relative frequencies of the age, gender and different groups of patients which were made according to the severity of the clinical symptoms and at the end, comparison between different patients groups and their respective inflammatory grading and staging was done.

The most important step was to compare between severity of the clinical features and the inflammatory grading and staging in respective cases. When the comparison was carried out and statistically analysed, it showed considerable relationship between severity of clinical features and the inflammatory grading and staging of liver tissues. The results were further tested with Chi-square test which showed P value of <0.05. Hence the relationship between severity of clinical features and the inflammatory grading and staging of the liver tissues was statistically significant.

The study had few limitations as well. One of the limitations included the small population sample including only one hundred patients, however the study may be done on larger population sample and then the results may be compared accordingly.

The results obtained from our study were quite similar to the different international studies done worldwide previously, which showed a statistically significant relationship between the severity of the clinically features and the corresponding inflammatory grading and staging in respective cases of chronic liver disease<sup>11-13</sup>.

**CONCLUSION**

There is significant association between clinical findings and the pathologic grading and

staging of liver tissues in chronic liver disease, which may give aid to the non-invasive diagnosis of liver fibrosis.

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