

# Clinical Presentation of Hepatitis C Virus in Urban and Rural Patients

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## ABSTRACT

**Objective:** The objective of this study was to determine the clinical presentation of hepatitis C and comparison of these features of hepatitis C among urban and rural areas.

**Study Design:** Descriptive / Cross sectional study

**Place and Duration of Study:** This study was conducted at the Jinnah Teaching Hospital attached to the Jinnah Medical College, Peshawar from October, 2017 to December, 2018

**Materials and Methods:** This cross sectional descriptive study was conducted on 100 consecutive patients. The participants were diagnosed for hepatitis C by suggesting Anti-HCV antibody through immune chromatographic technique (ICT) followed by ELISA and PCR (qualitative) to confirm; and ultrasound abdomen to detect ascites and any hepatic parenchymal changes. Patient's names, age, sex, marital status, address (rural and urban) and clinical presentations were recorded. Descriptive statistics were calculated in SPSS 20.0.

**Results:** Comparison was made for clinical presentations of Hepatitis C between rural and urban areas using chi-square test. P-value  $\leq 0.05$  was considered significant. Male were n=40(40%) and female were n=60(60%). The mean age was  $41.78 \pm 14.19$  years. The age ranged from 17 to 75 years. Most of the participants were married n=95(95%). The clinical presentation of hepatitis C were generalized body aches, jaundice, lethargy, fever, arthralgia, ascites, and malaise etc. The most common presentation of hepatitis C in our sample was generalized body aches n=45(45%). Of total the n=7(7%) cases reported arthralgia. Jaundice was found in n=5(5%) participants. Lethargy was found in n=7(7%) cases. Five (5%) cases presented with ascites. Malaise was reported by 7 cases. Nine (9%) cases were asymptomatic.

**Conclusion:** The difference in clinical presentations of hepatitis C between urban and rural areas was not statistically significant ( $P > 0.05$ ). This showed that the main role in clinical presentation of Hepatitis C is genetic and environment may have fewer roles.

**Key Words:** Hepatitis C, clinical presentations, rural, urban

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## INTRODUCTION

Generally the term Hepatitis refer to inflammation of the liver, may resulting from many causes like viral, bacterial, fungal, parasitic organisms, alcohol, drugs, autoimmune diseases, and metabolic diseases.<sup>1</sup> More than 50% of cases of acute hepatitis in the America are presented mainly in the emergency department.<sup>2</sup> Round about 55% to 85% of patients develop chronic hepatitis C post exposure to hepatitis C virus (HCV). The objective of hepatitis treatment is to eradicate the virus, attain a sustained virologic response (SVR), and intercept disease progression to avoid late complications.<sup>3</sup>

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Treatment of hepatitis with interferon based regimens are no longer recommended; as oral, direct acting antiviral agents are now recommended as the first line treatment. Complications of HCV in long-term comprise of cirrhosis and hepatocellular carcinoma (HCC).<sup>4,5</sup>

Most patients are asymptomatic during initial exposure to the HCV.<sup>6</sup> Approximately 30% of individuals present with features like fatigue, arthralgia, or jaundice, associated with a transient increase in serum amino-transferases, especially alanine amino-transferase,<sup>7</sup> but fulminant hepatic failure is a rare occurrence.<sup>8</sup> A spontaneous eradication of hepatitis C virus infection happens in 15%-30% of patients, while in the residual percentage the infection becomes chronic.<sup>9, 10</sup> Nevertheless, another study reported that after acute infection, up to 45% of young healthy individuals may produce a vigorous antibodies and cellular mediated immune responses, which results in the spontaneous eradication of the viral agent.<sup>11</sup>

Hoofnagle reported that extra-hepatic presentation may result in a poor health related quality of life. The symptoms of these comprise of fatigue, anorexia, muscles aches, joint pain, irritation, and headaches.<sup>7</sup> Fatigue is possibly the most common and disabling

extra-hepatic symptom of hepatitis C, found in almost 50% of the affected patients. Shakil et al.<sup>12</sup> reported that fatigue was found in about 61% of US blood donors who were affected by HCV. In another study on 239 participants with various causes of liver disease (including HCV) were examined in an outpatient setting, 70% had some form of musculoskeletal pain, and 54% had fatigue.<sup>13</sup>

## MATERIALS AND METHODS

This cross sectional descriptive study was carried out at Jinnah Teaching Hospital attached to the Jinnah Medical College, Peshawar, from October, 2017 to December, 2018 on 100 consecutive patients. Sampling was done using convenient sampling technique. Approval was taken from ethical review committee of the hospital. After detailed explanation to the participants regarding the purpose of the study a verbal informed consent was taken.

A detail history was taken followed by relevant examination. All participants were diagnosed for hepatitis C by history, examination and appropriate laboratory investigations. The participants were diagnosed for hepatitis C by suggesting Anti-HCV antibody through immune chromatographic technique (ICT) followed by confirmation with Enzyme-linked immune sorbent assay (ELISA) and qualitative Polymerase chain reaction (PCR). Abdominal ultrasound was also advised for each patient to look for the presence of Ascites and any parenchymal liver disease or focal mass lesion e.g. hepatocellular carcinoma. Patient's name, age, sex, marital status, addresses (rural and urban) and clinical presentations were recorded in pre-structured proforma. Pakistani nationals, both genders, age above 15 years and cooperative patients were included in this study.

The collected data were analyzed using SPSS version 20.0. Mean and standard deviation were calculated for quantitative variables like age. Frequency and percentages were computed for qualitative variables like sex, marital status, address (rural and urban) and clinical presentations of Hepatitis C. Comparison were made for clinical presentations of Hepatitis C between rural and urban areas using chi-square test. P-value less than or equal to 0.05 ( $\leq 0.05$ ) was considered significant.

## RESULTS

The total participants were hundred (100), in which male were n=40(40%) and female were n=60(60%). The mean age was 41.78±14.19 years. The age ranged from 17 to 75 years. Most of the participants were married n=95(95%). Half of the sample belong to urban n=50(50%) and half to rural areas n=50(50%). The most common age group was 31-45 years n=31(31%) followed by 46-60 years n=29(29%) and 15-30 years

n=28(28%). The least number of participants were in age group 61-75 years n=12(12%). The details of frequency of age groups, gender, marital status and rural/urban are given in table 1.

**Table No.1: Frequency of age groups, genders, marital status and rural/urban area**

Variable	Frequency	Percent	
Age group	15-30	28	28.0
	31-45	31	31.0
	46-60	29	29.0
	61-75	12	12.0
	Total	100	100.0
Gender	Male	40	40
	Female	60	60
	Total	100	100
Marital status	Married	95	95
	Unmarried	5	5
	Total	100	100
Urban/Rural	Urban	50	50
	Rural	50	50
	Total	100	100

**Table No.2: Frequency of clinical presentations of Hepatitis C**

Clinical presentations of Hepatitis C	Frequency	Percent
GBA	45	45
GBA, Routine screening	3	3
Routine screening(asymptomatic)	9	9
Lethargy, GBA	3	3
Maliase, Burning sensation	1	1
GBA, Arthralgia	2	2
Maliase	1	1
Arathalgia, Malaise	1	1
GBA, Ascites	1	1
Acute Hepatic (Jaundice)	5	5
Feverish, Malaise	1	1
GBA, pain RHC	2	2
Feverish , Legs aches	4	4
Arthralgia	7	7
Ascites	5	5
A/N screen	6	6
Lethargy, Burning sensation	1	1
Lethargy, Malaise	3	3
Total	100	100

\*GBA, generalized body aches; A/N, antenatal; RHC, right hypochondrium

The clinical presentation of hepatitis C were generalized body aches, jaundice, lethargy, fever, arthralgia, Ascites, and malaise etc. The most common presentation of hepatitis C in our sample was

generalized body aches n=45(45%). Of total the n=7(7%) cases reported arthralgia. Jaundice was found in 5% participants. Lethargy was found in n=7(7%) cases. Five (5%) cases presented with ascites. Malaise was reported by 7 (7%) cases. Nine (9%) cases in this study were asymptomatic and were found during routine screening for different tasks (preoperative, blood donation, going abroad etc). The six (6%) antenatal(A/N) cases were also found during the routine A/N screening (seemingly asymptomatic).Rests of details are given in table 2.

Comparison of clinical presentation of Hepatitis C between urban and rural areas showed that the difference between the two were not statistically significant (P=0.468). The details are given in table 3.

**Table 3: Comparison of clinical presentation of Hepatitis C between urban and rural areas**

Clinical presentation of Hepatitis C	Address				P-value*
	Urban		Rural		
	n	%	n	%	
GBA	21	21	24	24	0.468
GBA, Routine screening	1	1	2	2	
Routine screening	6	6	3	3	
Leg aches	0	0	0	0	
Lethargy, GBA	2	2	1	1	
Maliase, Burning sensation	0	0	1	1	
GBA, Arthralgia	2	2	0	0	
Malaise	1	1	0	0	
Arathalgia, Malaise	1	1	0	0	
GBA, Ascites	1	1	0	0	
Acute Hepatic (Jaundice)	3	3	2	2	
Feverish, Maliase	0	0	1	1	
GBA, pain RHC	0	0	2	2	
Feverish , Legs aches	2	2	2	2	
Arthralgia	3	3	4	4	
Ascites	4	4	1	1	
A/N screen	3	3	3	3	
Lethargy ,Burning sensation	0	0	1	1	
Lethargy, Malaise	0	0	3	3	

\*Pearson Chi-Square Test

**DISCUSSION**

In study we determined the clinical features/ manifestations of hepatitis C in our population. Due to environmental and genetic variations the manifestations

of hepatitis C may be variable in various populations. Hepatitis C virus is inconsistent because of the features of the viral RdRp (RNA-dependent RNA polymerase), increase rate of replication, and large population samples. The characteristics of Darwinian evolution of HCV are the appearance of the HCV genotypes, including six main variants and a large number of subtypes.<sup>14</sup>

Our findings showed that the clinical presentation of hepatitis C were generalized body aches, jaundice, lethargy, fever, arthralgia, ascites, and malaise etc. Fatigue is a complex symptom that includes a variety of complaints encompassing malaise, lethargy, lassitude and tiredness. The fatigue comprises the most common complaint among the hepatitis patients.<sup>15</sup> The incidence of fatigue in hepatic pathologies is less clearly defined. Fatigue is usually an integral part of the clinical features of individuals affected by autoimmune hepatitis, frequently paralleling liver inflammation as detected by serum alanine aminotransferase quantification or liver biopsy findings, and response is frequently fairly quick to the immunosuppressive therapy.<sup>16,17</sup> In viral hepatitis the acute presentations are often associated with feelings of fatigue or malaise, which slowly subsides as the patient recovers clinically (e.g. from hepatitis A). Though, the scenario in patients with chronic viral hepatitis appears to be more debatable. Specially, a significant frequency of patients with chronic hepatitis C who are followed in tertiary care centers, or who are used as a participant in clinical trials, complain of fatigue or decreased vitality, which has a direct negative impact on their health related quality of life.<sup>18</sup>

Our findings showed that the most common presentation of hepatitis C in our sample was generalized body aches. A study Barkhuizen et al.<sup>13</sup> on 239 participants with various causes of liver disease (including HCV) were examined in an outpatient setting, 70% had some form of musculoskeletal pain, and 54% had fatigue. These results are similar to our findings.

In the present study the comparison of clinical presentation of Hepatitis C between urban and rural showed the difference between the two areas were not statistically significant (P=0.468). This showed the main role in clinical presentation of Hepatitis C is genetic and environment has fewer roles. No such study has been traced in literature on comparison of clinical presentation of Hepatitis C between urban and rural areas.

However, this study is cross sectional design and small sample study; so more studies of randomized clinical trial design are required to further explore this area.

**CONCLUSION**

- The clinical presentations of hepatitis C were generalized body aches, jaundice, lethargy, fever, arthralgia, ascites, and malaise
- The most common presentation of hepatitis C in our sample was generalized body aches
- The difference in clinical presentations of hepatitis C between urban and rural areas were not statistically significant ( $P > 0.05$ ).

#### Author's Contribution:

Concept & Design of Study: Marifat Shah  
 Drafting: Marifat Shah  
 Data Analysis: Marifat Shah  
 Revisiting Critically: Marifat Shah  
 Final Approval of version: Marifat Shah

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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