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HEPATITIS "C"; FREQUENCY OF HEPATIC STEATOSIS IN NON RESPONDER PATIENTS

dr.sajidarain@gmail.com

Dr. Muhammad Iqbal[1], Dr. Adnan Ahmed[2], Dr. Muhammad Rafique Hingoro[3]

1. MBBS, FCPS
Associate professor Department of Medicine,
LUMHS, Jamshoro, Sindh, Pakistan
2. MBBS, FCPS
Assistant professor Department of radiology
LUMHS, Jamshoro, Sindh, Pakistan
3. M.B.B.S, (M.D-II Trainee)
Department of Medicine,
LUMHS, Jamshoro, Sindh, Pakistan

Correspondence Address:
Dr. Muhammad Rafique Hingoro
C/ of - National Medical Centre
Near National CNG Khurshid Town
Hala Naka Hyderabad
dr.sajidarain@gmail.com

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ABSTRACT… **Objectives:** To determine incidence of steatosis in non-responder cases of chronic HCV. **Study Design:** Cross-sectional study. **Setting:** Tertiary Care Sanatorium in Medicine Department of LIAQUAT University Hospital Hyderabad/Jamshoro. **Period:** 26-9-2011 to 25 August 2012. **Material & Methods:** Total 144 non-responders cases of Hepatitis C were integrated. Both gender, age 18 to 50 yrs, chronic HCV non-responder cases as well as cases fit for hepatic biopsy were integrated in study. Grading of Inflammation was carried out as indicated by histopathological measures. **Results:** Mean age was 48.5 $\pm$ 5.2years. Uppermost prevalence of chronic HCV disease was 65(45.13%) at 41 to 50 years age interval whereas 42(29.1%) cases were noticed in 31 to 40 yrs age group and 25(17.3%) cases were observed in 20 to 30 years of young age group. In this study hepatic steatosis occurrence was observed in 103 (71.5%) cases and these were categories as: grade 1, grade 2, grade 3, as (<33%) 45/103(43.68%), (33 to 66%) 35/103(33.98%), (>66%) 23/103(22.33%) respectively. **Conclusion:** Hepatic steatosis is a important risk factor the cases of HCV to decreased response to antiviral therapy and for progression toward fibrosis as observed in cases related to metabolic steatosis.

Key words: Non responders, hepatitis C, Hepatic steatosis.

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INTRODUCTION

In developing world as well as Pakistan, promising viral infections are widespread, HCV is one of those. It is nearly 2.2%. HCV results into high rate morbidity and mortality, it is projected that presently 170 million of populace is affected by this syndroms.[1] Infected populace in Pakistan is approximately 180,000,000.[2,3] Considering this huge populace, infection rates ranging from intermediate to high with disclosure to high risk factors such as deficiency of community health schooling, poverty and illiteracy, Pakistan is from extremely affected countries. HCV contamination is a factor of worldwide Public health threats dealing with most developing nations, where systems of health care are deficit in the safety measures essential to prevent the infections risks and where public consciousness regarding modes of transmission is inadequate.[4] Steatosis is a general pathological variation that is observed with CHCV-disease. In Pakistan high incidence rates of about 65.7% has been noted in HCV present.[5] Different studies like Chow WC in one study observed that Steatosis is in 39 % of cases that are infected with HCV. It has strong association with metabolic syndromes related to NAFLD. They additionally observed that steatosis is in the both cases with both variety of fatty liver that is with alcoholic as well as NAFLD.[6] Many studies have exhibited a positive association among hepatic steatosis as well as its progression in HCV.[7,8] Longitudinal studies, like those by Castera and associates provide stronger data for causal association: paired hepatic biopsies within unprocessed 96 cases with HCV exhibited that steatosis worsening was related to progression of liver fibrosis. Multivariate analysis, revealed that the merely factor autonomously related to progression of fibrosis was steatosis worsening.[9] A multicenter, multinational meta-analysis additionally accomplished that steatosis was autonomously related to fibrosis in cases having HCV.[7] Liver steatosis in cases with HCV disease is negatively associated to SVR to antiviral treatment

and resistance to insulin has been concerned as a contributory factor in several studies.[8,9] purpose of our study was determining incidence of steatosis among cases, non-responder of chronic HCV.

MATERIALS AND METHODS

This descriptive and cross sectional research was contains on 144 non responders patients of HCV treatment and was carried out at Medicine department, LUMHS, Jamshoro / Hyderabad with the period of time from 26-9-2011 to 25 August 2012. Both gender, age 18 to 50 yrs, chronic HCV non-responder cases as well as cases fit for hepatic biopsy were integrated in study. Patient with poor compliance history to IFN treatment, unfit cases or cases not willing to suffer liver biopsy, age above 50 and less than18 years, cases with co- morbid conditions history like end stage liver syndrome, hypertension and obese cases with BMI above 28 kg/m^2 were excluded from the study. Liver biopsy was carried out in each patient who pre-received interferon treatment for 6 months but yet positive HCV. This was additionally examined as indicated by protocol which comprises surveillance of H.E. stained section. Grading of Inflammation was carried out as indicated by histopathological measures.

Burn classification system was applied to grade steatosis which is as under.

a. Grade 0 = Non Involved
b. Grade-I = above 33 % Involved
c. Grade-II = ranging from 33 to 66 %
d. Grade-III = above 66 %

Fibrosis grading:

a. Grade 0 = No specific fibrosis
b. Grade-I = least fibrosis
c. Grade-II = Mild fibrosis
d. Grade-III = moderate fibrosis
e. Grade-IV = Cirrhosis

Relevant statistics was noted on a pre-planned proforma in accordance with exclusion as well as inclusion criteria and legal consent was integrated in this study. The statistics was analyzed via SPSS V.19.

RESULTS

Throughout the study interval, 144 cases with chronic HCV non-responder integrated in our study.

In this study, 115 (80.0%) were men and 29 (20.0%) were women, and mean age was 48.5 ± 5.2 with the range of 18-50 years. Table-I. & Figure-1

Age distribution	
Mean	48.5 years
SD	5.2 years

Table-I. Patients distribution according to age n = 144

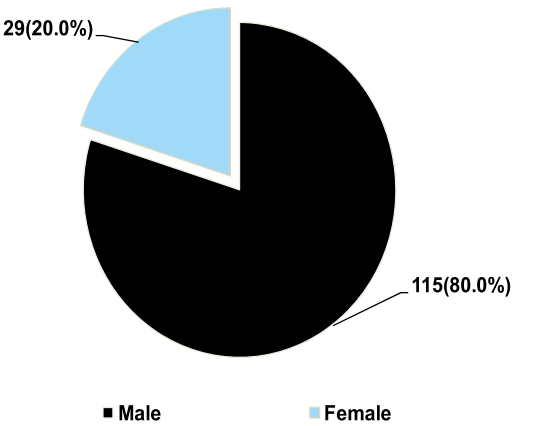

Figure-1. Patients distribution according to gender (n = 144)

The uppermost frequency of chronic HCV infection was observed 65(45.13%) at the age gap from 41 to 50 years whereas 42(29.1%) cases were noticed in 31-40 years of age group and 25(17.3%) cases were observed in 20-30 years of age group. Table-II.

Hepatic steatosis	Frequency/ %age
20 - 30	25(17.3%)
31 - 40	42(29.1%)
41 – 50	65(45.13%)
< 50	12(8.3%)

Table-II. Distribution of chronic HCV according to age group (n = 144)

Hepatic steatosis	Frequency/ %age
Yes	103(71.5%)
No	41(28.5%)

Table-iii. Distribution of hepatic steatosis according to frequency (n = 144)

In our study liver steatosis incidence was in 103 (71.5%) Table-III and these were marked as: grade 1, grade 2, grade 3, (<33%) 45/103(43.68%), (33 to 66%) 35/103(33.98%), (>66%) 23/103(22.33%) respectively. Table-IV.

Grades	Frequency/ %age
G-0	41 (28.47%)
G-I	45 (43.68%)
G-II	35 (33.98%)
G-III	23 (22.33%)

Table-IV. Hepatic steatosis according to grads (n = 144)

DISCUSSION

Examination of factors related to steatosis has been emphasized in medical literature over up to date years. The prevalence of FLD depends upon the populace scrutinized and technique applied for diagnosis. Within general populace, the incidence of FLD is 16% - 29% on ultrasonography,[10] 31%-34% on MRI 1,[11] and 15%-39% on liver biopsy.[12] In this study overall 144 cases were integrated, out of these cases men were dominant in quantity with around 80% and women cases comprised just 20 %. In these cases age group was evaluated and it exhibited that 45.13% cases were in age group of 41 to 50 years, 29.1% were 31 to 40 years of age. Uslusoy HS et al[13] reported that 81 cases (40 men, 41 women) diagnosed by ultrasonographic assessment having fatty liver contributed in study at Gastroenterology Division of Uludag University.

NegroF et al[14] has been quoted in a study on "Steatosis and insulin resistance in response to treatment of chronic hepatitis C. has described the relevance of steatosis with insulin resistance and viral treatment response". This study shows that the pathogenicity is by product of both because of viral as well as metabolic cause. This additionally detailed that viral insulin resistance because of viral disease not effected antiviral treatment however metabolic treatment has negative effect. In another research by Hwang SV et all[15] stated that HCV and steatosis depicted that incidence of steatosis is further in individuals undergoing HCV disease than in general populace. These outcomes are considered in this study where most of cases with 41-50 years of age and their BMI were relatively higher.

In the study of Qayyuma A et al[16] reported that number of patients 24 with grade 0 , 26 were with grade 1, 7 patients were with grade 2, and 24 cases were with grade 3. In another study established specificity 72.9%, sensitivity 71.1%, NPV 82.3% and PPV 58.7% for mild steatosis diagnosis based upon ultrasound; subsequent rates for higher steatosis grades, were 60.4%, 85.7%, 98.4% and 13%.[17] In the study of Calogero Camma et al,[18] Steatosis was grade-I in 110 cases, grade-II in 46 cases, and grade-III in 9 cases. In this study, incidence of cases with steatosis was 71.5 %, from these cases, highest percentage of cases were with grade 1 steatosis (43.68%). Whereas approximately 33.98% cases were with grade 2 grade 2 steatosis and approximately 22.33% were with steatosis of grade 3.

Conjeevaram HS et all[19] demonstrated that comparison of hepatic steatosis occurrence was assessed in 2 groups, 1st group was Caucasian Americans and 2nd group was African American. It was accomplished from this study that African American cases had higher hepatic steatosis incidence as compare to Caucasian Americans. This study moreover exposed that resistance to insulin was more possibly related to low sustained virological response as compare to hepatic steatosis. BMI relationship with steatosis has been considered by SHailkh et al[20] which exhibits a significant BMI relationship with steatosis this is reflected in this study too.

CONCLUSION

The findings of this study shows that incidence of hepatic steatosis was quit higher in cases of chronic HCV those were non responder of hepatic treatment. Further the biopsy showed that grades

steatosis as per Burnt grading system; grade 1 and grade 2 were more common in patients in this study. These findings of this study are required to be further investigated. Our study clearly suggested that these cases with HCV disease must be considered at earliest possible duration to prevent them from being non responder to antiviral treatment.

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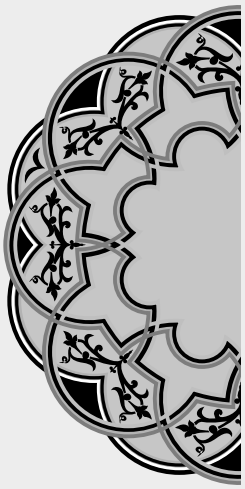

"Don't look back - you're not going that way."

Unknown

AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Dr. Muhammad Iqbal	1st Author	
2	Dr. Adnan Ahmed	2nd Author	
3	Dr. M. Rafique Hingoro	3rd Author	