

**Research Article****Frequency of Type II DM in Cases of Chronic HCV Infection****<sup>1</sup>Allah Ditta, <sup>2</sup>NosheenUnbber****and <sup>3</sup>TehminaKanwal**<sup>1</sup>MO at RHC BasirPur Okara, Pakistan.

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<sup>2</sup>WMO at Holy Family Hospital Rawalpindi, Pakistan.<sup>3</sup>WMO, Ahmad Medical Complex Rawalpindi, Pakistan.**ABSTRACT****Objective:**To determine the frequency of type II DM in cases of chronic HCV infection.**Material and methods:**In the present study, 200 cases with age range of 18 to 60 years of either gender having known history of HCV infection and no previous history of DM were included. HCV was detected on PCR by qualitative method. DM was labeled as yes where the fasting blood glucose was more than 126 mg/dl. The data was entered and analyzed using SPSS version 20.0. Chi square test was used to see the effects of effect modifiers and p value less than 0.05 was considered as significant.**Results:**Research study included 200 cases of hepatitis-C chronic in nature. The ratio of female to male was respectively 80 (40%) and 120 (60%). The range of the age was between thirty-five to seventy-four years with a mean age of  $47.25 \pm 11.02$  (SD). A total of 56 percent cases was observed with the frequency of (DM) diabetes mellitus proportionally it is 28 percent. Family history of 30 patients had reflected the signs of diabetes mellitus proportionally sharing 53.57 percent of the total. The significant p-value was 0.001. A value of BMI < 25 kilogram per square meter was noticed in fourteen patients; whereas BMI was above 25 in 42 patients with p-value equal to 0.009.**Conclusion:**Patients are repeatedly diagnosed for Type-II diabetes mellitus occurrence. Majority of them have already been diagnosed Hepatitis-C infection. BMI and positive history for diabetes also contributes and has association with type-II diabetes diagnosis.**Keyword:**HCV infection, type II DM.**INTRODUCTION:**

Among many causes the diagnosis of Hepatitis-C contributes in the chronic liver disease also leads to the severe level of liver and cirrhosis cancer. Current statistics state that the global prevalence of HCV infection is about three percent and more than 170 million souls are affected. This infection principally is responsible for liver problems but has related extrahepatic contribution including sialadenitis, cryoglobulinemia, porphyria cutanea tarda and glomerulonephritis [1]. Abnormal homeostasis of glucose is caused because of chronic diabetes mellitus. Diabetes mellitus also affects a total of 171 million souls over the world

before 2030 the same number will reach upto 366 million. South Asian meta-analysis and review by Jayawardane back in 2012 states that Pakistan is under this burden for the general public as 3 – 7.2 percent. In comparison to Europe the diabetes mellitus in Southern Asia has a prevalence six folds to four folds more prevalent [2]. Diabetes development is also associated with the HCV infection and it is reported by several research studies. Higher rates of Type-II diabetes mellitus is observed in the industrialized world ranging from 2 percent to 9.4 percent specially in the patients of chronic hepatitis or HCV infection.

Allison for the first time stated this link between diabetes and HCV infection back in 1994. After that the subject was studied repeatedly. HIV infection, African-American race, history of diabetes in family, sex and age are those factors which play their part in the diabetes development additionally affected by HCV infection [3].

Diabetes and Insulin resistance can be diagnosed at any HCV infection level. Numerous mechanisms have reflected diabetes development and resistance of Insulin with an additional factor of hepatitis-C. IR is promoted by the interference of signaling of insulin in the way of hepatocytes ultimately increasing the inflammatory response and cytokines production like oxidative stress, IL-6 and alpha TNF. HCV infection and diabetes frequency have already been studied several times. According to Elhawary (2011) Type-II diabetes prevalence in HCV infection is 13.84 percent with additional link between diabetes mellitus cirrhosis. Significant mortality and morbidity has an association with Type-II diabetes and HCV-infection. Objective and importance behind this research paper is finding out all those cases having link between HCV infection, cirrhosis, history of hepatitis and HCV infection. For the same rationale a valid association is to be established in the population of HCV seropositive and Type-II diabetes [4, 5].

**Objective:**To determine the frequency of type II DM in cases of chronic HCV infection.

**Study setting:**Services hospital, Lahore

**Study design:**Cross sectional study

**Study duration:**January 2017 to July 2017

**Sampling techniques:**Non-probability consecutive sampling

#### **MATERIAL AND METHODS:**

In the present study, 200 cases with age range of 18 to 60 years of either gender having known history of HCV infection and no previous history of DM were included. HCV was detected on PCR by qualitative method. DM was labeled as yes where the fasting blood glucose was more than 126 mg/dl. The data was entered and analyzed using SPSS version 20.0. Chi-square test was used

to see the effects of effect modifiers and p value less than 0.05 was considered as significant.

#### **RESULTS:**

Research study included 200 cases of hepatitis-C chronic in nature. The ratio of female to male was respectively 80 (40%) and 120 (60%). The range of the age was between thirty-five to seventy-four years with a mean age of  $47.25 \pm 11.02$  (SD). A total of 56 percent cases was observed with the frequency of (DM) diabetes mellitus proportionally it is 28 percent. Family history of 30 patients had reflected the signs of diabetes mellitus proportionally sharing 53.57 percent of the total. The significant p-value was 0.001. A value of BMI < 25 kilogram per square meter was noticed in fourteen patients; whereas BMI was above 25 in 42 patients with p-value equal to 0.009.

#### **DISCUSSION:**

Long-term, devastating and complicated issues develop because of diabetes mellitus and chronic virus of Hepatitis-C in the patients. This link of two associations is not accidental and surprising. Diabetes mellitus is caused by insulin resistance and cirrhosis is caused by Hepatitis-C of chronic nature. Global cross-sectional researches also talk about their close association [21]. Previously the relation between T2DM and HCV infection has also been established. Current research paper also validates the supportive detection about T3DM risk in the cases of HCV specially in the diagnosed diabetes and chronic hepatitis-C. According to Qureshi research held at Karachi a total of 24.5% of the HCV cases already had diagnosed diabetes mellitus [6]. Whereas, 18% have been reflected in the research held at Islamabad. Our findings also correlate and validate according to various studies held at China, Italy, Los Angeles and Korea with respective proportions of 19.05%, 32.5%, 21% and 24%.

Allison with his team observed in the patients of cirrhosis waiting for transplantation, those patients already suffering HCV infection has five-time greater chances to be indulged into Type-II

diabetes mellitus. Independent of liver disorder, BMI and sex [8]. Current research also associates the increasing factor of age specially above forty-five years with T2DM. The same is mentioned in the studies of Shurti and Mitchell in respect of young and old age [9, 10]. More than fifty percent also showed family history of hepatic hepatitis and diabetes mellitus as mentioned earlier. Another correlation is observed in the research of Samir as he observed a total of 41.08 percent positive cases of family history about diabetes and they were also subjected to infection of HCV in comparison to the infection of HBV, 56.5% against 2.7% [11]. T2DM also depends on the potential factors obesity and overweight. Diabetes patients were reported a BMI value of  $<25 \text{ kg/m}^2$ , other researches also speak in the favor of obesity and diabetes relation. Studies also reflected that twenty percent cases of HCV infection and diabetes were in the category of obese cases. These patients also had link with fibrosis and steatosis progression [12]. Another author Nevita reports the same relation and interdependence of obesity, BMI, Hepatitis-C and T2DM [13].

#### CONCLUSION:

Patients are repeatedly diagnosed for Type-II diabetes mellitus occurrence. Majority of them have already been diagnosed Hepatitis-C infection. BMI and positive history for diabetes also contributes and has association with type-II diabetes diagnosis.

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