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Research Article

**STUDY TO KNOW THE INCIDENCE OF HEPATITIS C VIRUS  
INFECTION IN PATIENTS HAVING DIABETES MELLITUS**<sup>1</sup>Dr. Muhammad Aamir Aziz, <sup>2</sup>Dr. Sabeen Qureshi, <sup>3</sup>Dr. Barira Tabassum<sup>1</sup>MO, BHU 94/9-L, Sahiwal<sup>2</sup>WMO THQ hospital Sharaqpur<sup>3</sup>Rawal Institute of Health Sciences Islamabad.**Abstract:**

*Hepatitis C virus (HCV) is higher significantly present in type 2 diabetes mellitus (DM), regardless of cirrhosis, control, or HBV patients, regardless of the patient with chronic infection. In addition, it significantly increases the DM risk in individuals susceptible to previous HCV infection. Even in patients who are non-diabetics, there is resistance to insulin and in the insulin signaling pathways have specific defects.*

*Objective: The study to know the incidence of Hepatitis C viral infection in patients having Diabetes Mellitus.*

*Study Design: A Cross Sectional Study.*

*Place and Duration: The study was performed in the medicine department of Nishter Hospital, Multan for the Period of one year from April 2016 to April 2017.*

*Subject and Method: From 154 diabetic patients treated in emerging clinical patients was analyzed for HCV antibodies using an enzyme-linked immunosorbent assay (ELISA) commercial second generation.*

*Findings: 18.83% (n = 29) of 154 diabetic patients were anti-HCV antibodies positive. The high incidence of HCV antibodies in the age of 29 was 41-50%. HCV prevalence in diabetic women was 13.84% in male patients and 22.47% in male patients.*

*Conclusions: The HCV infection prevalence among diabetic people in Multan is 2-3 times higher than that reported by the Pakistan Medical Research Council (PMRC), compared to normal healthy individuals.*

**Key words:** *Diabetes mellitus, HCV.*

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**INTRODUCTION:**

Hepatitis C virus (HCV) is a widespread problem all over the world and affects millions of people. Patients with acute infection convert to chronic hepatitis and the virus becomes a high source of infection; Cirrhosis and complications develop in both the lobe and the individual. In addition, HCV is increasingly considered the leading cause of liver findings. Cryoglobulinemia in mixed form reported until half of patients with hepatitis C in chronic form, although significant clinically disease is least common. Finally, HCV infection is also an important risk factor for diabetes (DM2). Mating, pathogenesis and complex effects may be secondary after cryoglobulineminin prevalence, but are recognized poorly. Glucose intolerance is common etiology of cirrhosis of liver and there is excessive diabetes in about 20% of patients. If cirrhosis is associated with HCV, the diabetes risk is more than post-transplant diabetes and more frequent in patients with hepatic impairment due to HCV.

**MATERIAL AND METHOD:**

Diabetic patients who were referred to Multan's at Nishtar Hospital for a period of one year from April 2016 to April 2017 were examined for the absence or presence of antibodies to HCV. An immunoabsorption assay coupled to second generation enzymes was used. After receiving written permission, 154 patients received blood. Before getting blood, he was asked about the previous episode of liver disease or jaundice. For this reason, patients having liver disease were removed from the work. The result after the evaluation was bad. In the questionnaire form all findings were recorded.

**RESULTS:**

154 total patients were evaluated, 65 (42.2%) were male and 89 (57.8%) were female. Age was between 20 and 80. 29.26% of the patients were in the age group 41-50, 22.22% in the age group 51-60 and 19.14% in the age group 31-40. Almost all patients have BMI greater than 27. The prevalence of antibodies against HCV overall was 19.03% (n = 28/155).

**Table 1. Prevalence of HCV antibody in various age groups of diabetes**

Age group (years)	No. screened	No. positive	%age positive
11-20	5	0	0.00
21-30	25	1	04.00
31-40	47	9	19.14
41-50	41	12	29.26
51-60	27	6	22.26
61-80	9	1	11.11
Total	154	29	18.83

As seen in Table 1, the maximum age for HIV infection incidence was among 41-50 years of age (24-26%) accompanied by the 51-60 age group (22.22%). The highest prevalence varied between 32-61 (76%), the age group most common for DM2. The HCV prevalence in diabetic women is 22.47%, compared to 13.84% of diabetic men. The average age for women was 43 years. Male patients average age with negative HCV was 43 years, while the mean age was 45 years in diabetic men with HCV positive.

**Table 2**

Gender	No. of patients	No. of positive	%age positive
Male	65	9	13.84
Female	89	20	22.47
Total	154	29	18.83

When the results were analyzed by sex, statistically significant differences were found as shown in Table 2.

**DISCUSSION:**

In this study we came to know that in diabetics HCV infection is more common than in the general normal people. In diabetic patients prevalence of HCV infection may be 19.03% . Although we have not confirmed in the healthy general population the prevalence of HCV infection in this study. The results of this study were compared with a series of previous studies to know the HCV infection prevalence in the normal population. The area is healthy. In 2009 Pakistan Medical Research Council

(PMRC) conducted a huge survey to know the HCV infection prevalence. The anti-HCV antibodies prevalence in the healthy general population was 4.9% in Pakistan, 6.7% in Punjab, while many other studies were between 5% and 10%. Therefore, when we compare the results, statistically significant differences from previous studies HCV infection prevalence (18.83%) in diabetic patients and in the general healthy population (6-10%). The size and sample in this study is small and more extensive work to confirm study results. Because of the identification of hepatitis C virus, many epidemiological studies have reported that the prevalence of type 2 diabetes mellitus is higher in HCV-infected individuals. Although the first calls for diabetes and liver disease were made in people with advanced liver disease, new reports have shown an increase in type 2 diabetes mellitus before the development of liver cirrhosis. In addition, there has been an epidemiological link between type 2 diabetes and other causes of liver disease such as HCV infection, viral hepatitis B infection and alcohol abuse. The increase in the number of diabetes mellitus type 2 cases in HCV-infected individuals was reported to be four times higher in some studies than in the general population. Other factors, such as high body mass index, elder age, and obesity, which characterize the family story of diabetes. The mechanism by which HCV infection increases the risk of diabetes is not clear, but important evidence suggests that viral proteins may be effective on hepatic lipid steatosis, insulin resistance and cellular processes involved in the altered secretion. Insulin associated with diabetes development. Insulin resistance was recently confirmed in an experiment using a transgenic mouse model with a central HCV gene. The experiment showed that high insulin levels resulted in loss of glucose tolerance and development of diabetes mellitus after a high fat problem. In this study, participants were overweight or obese. Those with an additional risk factor may think that these tests may be more likely to develop diabetes. It implies that people with overweight or obese HCV will increase insulin resistance and improve the progression of diabetes. It is also known that insulin inhibits phosphorylation of hepatic glucose production, subpopulations of insulin receptors, tumor necrosis factor, high (TNF), low inhibition at high levels; and another retrospective study with insulin sensitivity, antitumor necrosis factor administration. Morphological changes and functional disorders found in human pancreatic cells also have a direct cytopathic effect on the cells of the verified islets. insulin secretion. Other factors that are responsive to antiviral treatment of the inflammatory state of the liver, hepatic histological stage of the HCV

genotype, and HIV-positive diabetic mellitus are unclear and require further study.

### CONCLUSION:

The association of HCV with diabetes is an important public health problem. Hundreds of thousands of patients are affected worldwide and many others have glucose intolerance. It is likely that microvascular and diabetes-related macrovascular complications, which may contribute to another formation, and inflammatory response at the liver stage. In addition, a hypothesized two-way analytic relationship between HCV-induced liver disease and diabetes may arise. Based on this study, we strongly recommend the detection of all diabetic patients and their liver status and treatment for HCV.

### REFERENCES:

1. Ford, Mary M., Ashly E. Jordan, Nirah Johnson, Eric Rude, Fabienne Laraque, Jay K. Varma, and Holly Hagan. "Check Hep C: a community-based approach to hepatitis C diagnosis and linkage to care in high-risk populations." *Journal of public health management and practice* 24, no. 1 (2018): 41-48.
2. Boyd, A., Lacombe, K., Lavocat, F., Mialhes, P., Lascoux-Combe, C., Girard, P.M. and Zoulim, F., 2018. Low incidence of precore W28\* mutant variants in treated hepatitis B virus and human immunodeficiency virus co-infected patients. *Antiviral research*, 149, pp.174-178.
3. Khuda-Bukhsh, A.R., 2018. Modulation of TERT and Top II Activities by the Homeopathic Nosode, Hep C 30 in Demonstrating its Anticancer Potential against Hep G2 Liver Cancer Cells: A Commentary on one of our Published Research. *BAOJ Med Nursing*, 4, p.053.
4. Li, Darrick K., Yanjie Ren, Daniel S. Fierer, Stephanie Rutledge, Obaid S. Shaikh, Vincent Lo Re III, Tracey Simon, Abdul-Badi Abou-Samra, Raymond T. Chung, and Adeel A. Butt. "The short-term incidence of hepatocellular carcinoma is not increased after hepatitis C treatment with direct-acting antivirals: An ERCHIVES study." *Hepatology* 67, no. 6 (2018): 2244-2253.
5. Lafferty, L., Rance, J. and Treloar, C., 2018. Who goes first? Understanding hepatitis C risk among injecting networks in the prison setting. *Drug & Alcohol Dependence*, 183, pp.96-101.
6. Lazarus, J., Stumo, S.R., Gore, C., Harris, M., Hendrickx, G., Jauffret-Roustide, M., Kautz, A., Maticic, M., Reic, T. and Safreed-Harmon, K., 2018. Patient monitoring of changes in the

- European policy response to viral hepatitis C treatment: Hep-CORE findings from 2016 to 2017. *Journal of Hepatology*, 68, pp.S144-S145.
7. Pang Y, Kartsonaki C, Turnbull I, Guo Y, Clarke R, Chen Y, Bragg F, Yang L, Bian Z, Millwood IY, Hao J. Diabetes, plasma glucose and incidence of fatty liver, cirrhosis and liver cancer: A prospective study of 0.5 million people. *Hepatology*. 2018 May 7. Ferreira, G.L.C., Marano, C., De Moerlooze, L., Guignard, A., Feng, Y., El Hahi, Y. and van Staa, T., 2018. Incidence and prevalence of hepatitis B in patients with diabetes mellitus in the UK: A population- based cohort study using the UK Clinical Practice Research Datalink. *Journal of viral hepatitis*, 25(5), pp.571-580.
  8. Smith, D.M., Salters, K.A., Eyawo, O., Franco-Villalobos, C., Jabbari, S., Wiseman, S.M., Press, N., Montaner, J.S., Man, S.P., Hull, M. and Hogg, R.S., 2018. Mortality among people living with HIV/AIDS with non-small-cell lung cancer in the modern HAART Era. *AIDS care*, 30(7), pp.936-942.
  9. Estes C, Razavi H, Loomba R, Younossi Z, Sanyal AJ. Modeling the epidemic of nonalcoholic fatty liver disease demonstrates an exponential increase in burden of disease. *Hepatology*. 2018 Jan 1;67(1):123-33.
  10. Lazarus, J., Stumo, S.R., Gore, C., Harris, M., Hendrickx, G., Jauffret-Roustide, M., Kautz, A., Maticic, M., Reic, T. and Safreed-Harmon, K., 2018. Patient monitoring of changes in the European policy response to viral hepatitis C treatment: Hep-CORE findings from 2016 to 2017. *Journal of Hepatology*, 68, pp.S144-S145.
  11. Simon, T.G., King, L.Y., Chong, D.Q., Nguyen, L.H., Ma, Y., VoPham, T., Giovannucci, E.L., Fuchs, C.S., Meyerhardt, J.A., Corey, K.E. and Khalili, H., 2018. Diabetes, metabolic comorbidities, and risk of hepatocellular carcinoma: Results from two prospective cohort studies. *Hepatology*, 67(5), pp.1797-1806.
  12. Pang, Y., Kartsonaki, C., Turnbull, I., Guo, Y., Clarke, R., Chen, Y., Bragg, F., Yang, L., Bian, Z., Millwood, I.Y. and Hao, J., 2018. Diabetes, plasma glucose and incidence of fatty liver, cirrhosis and liver cancer: A prospective study of 0.5 million people. *Hepatology*.
  13. Cacoub, P., Desbois, A.C., Comarmond, C. and Saadoun, D., 2018. Impact of sustained virological response on the extrahepatic manifestations of chronic hepatitis C: a meta-analysis. *Gut*, pp.gutjnl-2018.
  14. Fabiani, S., Fallahi, P., Ferrari, S.M., Miccoli, M. and Antonelli, A., 2018. Hepatitis C virus infection and development of type 2 diabetes mellitus: Systematic review and meta-analysis of the literature. *Reviews in Endocrine and Metabolic Disorders*, pp.1-16.
  15. Simeonovic, C.J., Popp, S.K., Starrs, L.M., Brown, D.J., Ziolkowski, A.F., Ludwig, B., Bornstein, S.R., Wilson, J.D., Pugliese, A., Kay, T.W. and Thomas, H.E., 2018. Loss of intra-islet heparan sulfate is a highly sensitive marker of type 1 diabetes progression in humans. *PLoS one*, 13(2), p.e0191360.
  16. Thuluvath, P.J. and Savva, Y., 2018. Mental and physical health-related quality of life in patients with hepatitis C is related to baseline comorbidities and improves only marginally with hepatitis C cure. *Clinical and translational gastroenterology*, 9(4).