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ORIGINAL ARTICLE

Frequency of Asymptomatic Type 2 Diabetics in Hepatitis B and C

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ABSTRACT

Background: In chronic hepatitis diseases the liver impairment results in imbalance in glucose homeostasis and metabolism resulting in type 2 diabetes
Aim: To estimate the frequency of type 2 diabetes in chronic hepatitis B and C patients.
Study Design: Cross sectional analytical study
Place and Duration of Study: Department of Medicine, Chandka Medical College Hospital, Larkana 1st October 2020 to 31st March 2021.
Methodology: One hundred patients of hepatitis were recruited. Fifty patients of hepatitis B and 50 patients of hepatitis C age 20-65 years were enrolled. Their fasting blood sugar and HbA_1C levels were analyzed and correlated with their clinical symptoms.
Results: 20% hepatitis B and 26% hepatitis patients had asymptomatic type 2 diabetes. There were more men affected from hepatitis than women and type 2 diabetic respectively.
Conclusion: Asymptomatic type 2 diabetics need suffering from hepatitis B and hepatitis C need to be screened for better treatment plan.
Keyword: Hepatitis B, Hepatitis C, Type 2 diabetes

INTRODUCTION

Viral infections are the major burden on health system exceeding many epidemics globally. Hepatitis B and hepatitis C are two of the major hepatitis types causing blood born infection leading to cirrhosis, hepatocellular cancers and morbidity. The burden of this disease is much larger in developing countries than developed world[1-2]. In Pakistan hepatitis B and C have a high prevalence especially in periphery areas. People lack the knowledge and awareness about prevention of these diseases. In provinces like Sindh the condition is much worst. A study conducted in Pakistan showed prevalence of hepatitis C as 14.3% and of hepatitis B as 6.7% in Sindh province respectively[3]. An estimated 248 million[4] of people are infected with chronic hepatitis B and 71.1 million[5] infected with chronic hepatitis C worldwide. In European areas there are 4.7 million of hepatitis B cases and 3.9 million of hepatitis C infection[6]. The risk factors involved in transmission of hepatitis B or hepatitis C includes piercing, tattooing, reuse of metals such as syringes, razors by multiple people and sexual transmission[7].

Major function of liver is glycolysis and glucose homeostasis.[8] Hepatitis B and C are liver diseases which cause anomalies in normal functioning of hepatic cells. As a consequence glucose metabolic pathways are disturbed causing irregularities in glucose homeostasis. Type 2 diabetes mellitus is a complication of chronic advanced hepatic diseases such as hepatitis B and hepatitis C[8-10]. Glucagon promotes glycogen inside the liver through chain of reactions. Insulin regulates glycogen biosynthesis[11]. According to a 2017 data mortality rate from diabetes is more than 3.7 million people worldwide[12-13]. Many of hepatitis B and hepatitis C patients are not known of their diabetic status. In Pakistan the prevalence of asymptomatic type 2 diabetes is already 33.7% only in single city data analysis[14].

The present study was therefore focused on finding the frequency of asymptomatic type 2 diabetics in chronic hepatitis B and hepatitis C patients. Early diagnosis of type 2 diabetes might help prevent formation of life risking complications in these patients.

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MATERIALS AND METHODS

It was a cross sectional analytical study was conducted at Department of Medicine, Chandka Medical College Hospital, Larkana 1st October 2020 to 31st March 2021 and recruited 100 patients after permission from Ethical Committee. Fifty confirmed hepatitis B and 50 confirmed hepatitis C patients who came to medical OPD with symptoms other than their already known liver disease. The age of the enrolled patients was between 20-65 years. Patients suffering from hepatic injury/ shrinkage/ cirrhosis without hepatitis B and C were not included in the study. After taking an informed consent each patient data was documented on a well-structured questionnaire including their demographic, clinical symptoms regarding type 2 diabetes, liver ultrasound, BMI and familial history. A 3 cc fasting blood was withdrawn from each hepatitis B and C patients for biochemical analysis of their fasting blood sugar (FBS) and HbA1c. The presence of clinical features such as polyhedral thirst, polydipsia, polyuria, numbness, blurred vision and fatigue were correlated with their blood sugar reports. The BMI and familial history data was also recorded. The FBS was analyzed by Human kit, calorimetric methods whereas HbA1C was analyzed by auto analyzed of Abbot company-USA.

Data was analyzed by using SPSS version 23.0. Age, BMI, FBS and HbA1C results were analyzed by applying independent 't' test (P<0.05) and gender distribution was type 2 diabetes frequency was estimated through Chi square test analysis.

RESULTS

There mean age was 37.75±8.5 years. There were more males in both hepatitis B and hepatitis C liver diseases such as 62% and 52% men. HbA1C was raised above pre diabetic state in 10 hepatitis B patients and in 13 hepatitis C patients respectively (Table 1).

Seventeen (34%) chronic hepatitis B and 18 (36%) hepatitis C patients were positive for familial history. Educational status was not very supportive being 32% and 38% in hepatitis B and C respectively. Exercise was commonly observed as in terms of brisk labour work in some of the patients (Table 2)

It was recorded in the current research that out of the total 50 chronic hepatitis B and 50 chronic hepatitis C patients, 10 and 13 were asymptomatic type 2 diabetics respectively. Most of these patients came with typical clinical symptoms of diabetes and were not known of their co-morbidity (Fig. 1)

Table 1: Comparison of biochemical analytes and demographic in chronic hepatitis B and C confirmed patients.

Variable	Hepatitis B	Hepatitis C
Age (years)	35.4±7.5	40.1±9.5
Gender		
Males	31 (62%)	26 (52%)
Females	19 (38%)	24 (48%
HbA1C	10 (20%)	13 (26%)
FBS >115	13 (26%)	14 (28%)

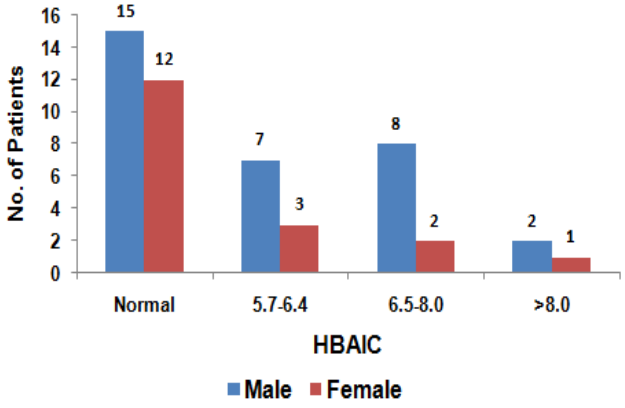
P value<0.05

Table 2: Comparison of familial history, BMI and other variables with chronic hep B and C confirmed patients

Variable	Hepatitis B	Hepatitis C
Family history	17 (34%)	18 (36%)
Education	16 (32%)	19 (38%)
BMI (kg/m^2)	23.0±3.2	23.6±3.5
Fatty liver on USG	12 (24%)	11 (22%)
Vigorous exercise	5 (10%)	6 (12%)

P value<0.05

Fig 1: HbA_1C ranges in hepatitis B patients



DISCUSSION

In this study 20-65 years of chronic hepatitis B and C patients were included with a mean age of 37.75±8.5 years. Literature supports that majority (80-90%) of hepatitis patients are above 20 year of age. Moreover as the study was focusing on type 2 diabetes undiagnosed or asymptomatic cases therefore the age group under consideration was in relation with the age for onset of type 2 diabetes[15]. In the present study the percentage of male patients was much higher than female patients. Khan et al[16] and Ruggieri et al[17] also justifies that male hepatitis patients are more commonly observed than females. The reason behind could be their more influx towards outer world, barber shops, drug addiction and sexually disease transmission. Pakistani population is very well prone towards this above mentioned type of transmission methods[16].

The frequency of asymptomatic type 2 diabetes in hepatitis Band C was reported as 20% and 26% respectively. Similar result has been reported from other research from Pakistan. One such study elaborated that type 2 diabetes was present in 27.9% of total hepatitis B and C cases with frequency of type 2 diabetes in hepatitis C to be higher than hepatitis B as mentioned in present study work[18]. This study also evaluated that fatty liver, educational status and family history also plays a significant role in developing co morbidities such as type 2 diabetes in chronic hepatitis patients[19-20].

CONCLUSION

The asymptomatic type 2 diabetic patients are presented as 20% and 26% in hep B and C patients and need early diagnosis, management and treatment.

Conflict of interest: Nil

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