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ORIGINAL ARTICLE

A Study of Thrombocytopenia in cases of Hepatitis C infection presenting at tertiary care hospital

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ABSTRACT

Aim: To determine the frequency of thrombocytopenia in hepatitis c patients presenting at tertiary care hospital.
Methods: This cross sectional study was conducted at Department of Physiology in collaboration with Department of Medicine, Bahawal Victoria Hospital, Bahawalpur from March 2020 to September 2020 over the period of 6 months. Total 150 of hepatitis C, either male or female having age 20-60 years were included. Thrombocytopenia was assessed in selected patients.
Results: In this study mean age of the patients was 44±12.38 years. Out of 150 patients of hepatitis C, thrombocytopenia was present in 48(32%) patients. In age group 20-40 years, thrombocytopenia was found in 14(26.92%) patients while in age group 41-60 years, thrombocytopenia was seen in 34(34.69%) patients. No statistically significant association of thrombocytopenia with age group was detected with p value 0.332. Male patients were 93(62%) and female patients were 57(38%). Thrombocytopenia was found in 30(32.26%) male patients and in 18(31.58%) female patients. Association of thrombocytopenia with gender was not statistically significant with p value 0.931.
Conclusion: Results of present study revealed that higher proportion of hepatitis C patients found with thrombocytopenia. Most of the patients belonged to 4th and 5th decade. Higher number of male patients were victim of hepatitis C infection as compared to female patients. Most of the patients were obese. Higher number of patients were normotensive and non-diabetics.
Keywords: Hepatitis C, thrombocytopenia, cirrhosis, hepatocellular carcinoma

INTRODUCTION

Hepatitis C (HCV) is a viral infection which primarily affected the liver[1]. About 185 million population of the world is infected with HCV and tow third of these cases developed chronic liver disease (CLD)[2]. In Pakistani population, about 10 million cases are reported with HCV infection with infection rate 2.2-14%[3]. Thrombocytopenia is very common in cases of HCV and platelet count less than 150000 cell/ microliters are considered as thrombocytopenia[4]. The main role of platelets is maintaining normal homeostasis and vessel wall repair.[5]Infectious diseases, massive blood loss, sequestration of platelets, increase in destruction or consumption of platelets, platelet production failure are the very common causes of thrombocytopenia[5]. Literate showed a strong association between HCV infections and development of thrombocytopenia, studies documented that about 64-76% cases suffering from fibrosis, cirrhosis, HCV infection and chronic infections showed manifestations of thrombocytopenia as compared to non-cirrhotic (6%) cases[6-7]. This indicates that with increase in hepatocellular damage, prevalence and severity of thrombocytopenia increases. Mortality and increased risk of variceal bleeding are the major clinical complications of such cases. The mechanism leading to thrombocytopenia in HCV is complex and involves various host and viral factors [8].

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This study is planned to find out the frequency of Thrombocytopenia in cases of hepatitis C infection. Results of this study may help us for the early management of Thrombocytopenia. We may be able of to reduce the morbidity of hepatitis C infection patients.

OPERATIONAL DEFINITION

Thrombocytopenia: Thrombocytopenia considered as platelet count<150000 cell/ microliters

Hepatitis C: The diagnosis of HCV status was done on ELISA and confirmed on PCR**.**

BMI was calculated by following formula:

BMI=weight in kilograms / height in meters^{2}and BMI≥30 was taken as obese and <30 as non-obese.

MATERIAL AND METHODS

This cross-sectional study was conducted at Department of Physiology, Bahawal Victoria Hospital, Bahawalpur from March 2020 to September 2020 over the period of 6 months. Total 150 of hepatitis C, either male or female having age 20-60 years were included. All cases with hepatitis B, patients with autoimmune disorders and patients with liver cirrhosis were excluded from the study. Study was approved by ethical committee and written informed consent was taken from every patient. History was taken of all the patients. Blood sample was taken from everypatient and send to laboratory for platelet count. Findings was noted on pre-designed proforma along with demographic profile of the patients. Height of the patients was measured by measuring tape and weight was taken by weighing machine to calculate the BMI. History of diabetes

mellitus was also taken.Data was entered in computer software SPSS version 16. The quantitative variables of the study i.e. agewas presented as Mean±SD. The qualitative variables like gender anddiabetes mellitus were presented as frequencies and percentages. Pie chart was drawn for frequency of Thrombocytopenia. Stratification was done for age, gender and diabetes mellitus. Post stratification chi-square test was applied to see the effect of these on outcome variable. P.value ≤0.05 was considered as significance.

RESULTS

In this study mean age of the patients was 44±12.38 years. Out of 150 patients of hepatitis C, thrombocytopenia was present in 48(32%) patients (Fig. 1). Two age groups were created i.e. age group 20-40 years and age group 41-60 years. Age group 20-40 years consisted on 52(34.67%) patients while age group 41-60 years was consisted on 98(65.33%) patients. In age group 20-40 years, thrombocytopenia was found in 14(26.92%) patients while in age group 41-60 years, thrombocytopenia was seen in 34(34.69%) patients. No statistically significant association of thrombocytopenia with age group was detected with p value 0.332 (Table 1).

Male patients were 93(62%) and female patients were 57(38%). Thrombocytopenia was found in 30(32.26%) male patients and in 18(31.58%) female patients. Association of thrombocytopenia with gender was not statistically significant with p value 0.931 (Table 2).

Obese patients were 87(58%) while non-obese patients were 63(42%). Thrombocytopenia was seen in 27 (31.03%) obese patients while in 21(33.33%) non-obese patients. Insignificant association between thrombo-cytopenia and obesity was detected with p value 0.786 (Table 3).

Total 56(37.33%) patients were hypertensive, and thrombocytopenia was found in 16(28.57%) patients. Normotensive patients were 94(62.67%) and thrombocytopenia was found in 32(34.04%) patients. Statistically insignificant association between thrombo-cytopenia and hypertension was noted with p value 0.487. (Table 4)Total 47(31.33%) patients were diabetics, and 103(68.67%) patients were non-diabetics. Thrombo-cytopenia was found in 13(27.66%) diabetics and in 35(33.98%) non-diabetics. No association of thrombo-cytopenia with diabetic status was found with p value 0.441 (Table 5).

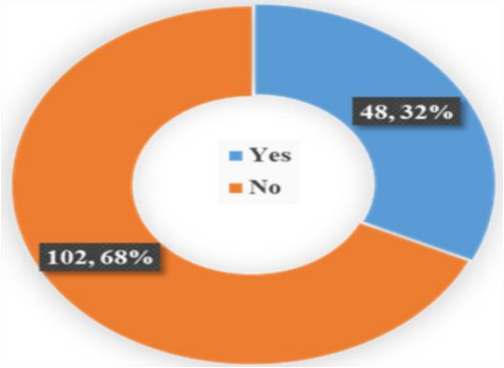

Fig. 1: Frequency of thrombocytopenia

Table 1: Stratification for age

Age group	Thrombocytopenia		Total	P value
	Yes	No		
20-40	14 (26.92)	38 (73.08)	52 (34.67)	0.332
41-60	34 (34.69)	64 (65.31)	98 (65.33)	
Total	48 (32)	102 (68)	150	

Table 2: Stratification for gender

Gender	Thrombocytopenia		Total	P value
	Yes	No		
Male	30 (32.26)	63 (67.74)	93 (62)	0.931
Female	18 (31.58)	39 (68.42)	57 (38)	
Total	48 (32)	102 (68)	150	

Table 3: Stratification for obesity

Obesity	Thrombocytopenia		Total	P value
	Yes	No		
Obese	27 (31.03)	60 (68.97)	87 (58)	0.786
Non-obese	21 (33.33)	42 (66.67)	63 (42)	
Total	48 (32)	102 (68)	150	

Table 4: Stratification for hypertension

Hypertension	Thrombocytopenia		Total	P value
	Yes	No		
Hypertensive	16 (28.57)	40 (71.43)	56 (37.33)	0.487
Normotensive	32 (34.04)	62 (65.96)	94 (62.67)	
Total	48 (32)	102 (68)	150	

Table 5: Stratification for diabetes mellitus

Diabetes Mellitus	Thrombocytopenia		Total	P value
	Yes	No		
Diabetics	13 (27.66)	34 (72.34)	47 (31.33)	0.441
Non-diabetics	35 (33.98)	68 (66.02)	103 (68.67)	
Total	48 (32)	102 (68)	150	

DISCUSSION

Hepatitis C virus (HCV) is consideredtobe the main etiological factor for chronic liver disease and accounts for about 70 – 75% cases of chronic hepatitis and 15 –20% cases of cirrhosis and hepatocellular carcinoma.[9]Viral hepatitis is highly endemic in Pakistan. Pakistan carries one of the world's highest burdens of chronic hepatitis and mortality due to liver failure and hepatocellular carcinomas. Although, prevalence of and risk factors for hepatitis B and hepatitis C are not exactly available, a weighted average of HCV prevalence was 3.0%[10]. Thrombocytopenia, is a common complication in cases of CLD, that has been observed in about 76% of the cases[11]. The severity of thrombocytopenia can be variable either from being transient and isolated, to a severe, life threatening condition[12].

The purpose of present study was to find out the frequency of thrombocytopenia in cases of hepatitis C infection. In this study mean age of the patients was 44±12.38 years. Out of 150 patients of hepatitis C, thrombocytopenia was present in 48(32%) patients. In one study by Nawaz et al[13] mean age of patients was 47.25±11.52 years and out of 141 patients, thrombocytopenia was present in 53% patients of hepatitis C infection. Findings of this study are higher than our study. In another study by Bano et al[14] frequency of Thrombocytopenia was 43.3% in cases of hepatitis C. In study of Wang et al[15] reported frequency of thrombocytopenia was 10.2% in cases of hepatitis C which is much lower than our study. Similarly study of Dodhy et al[16] reported frequency of Thrombocytopenia in cases of hepatitis C as 25%. In another study by Rahman et al[17] Thrombocytopenia was found in 22% patients of hepatitis C infection. In another study by AZIZ et al[18] found thrombocytopenia in 22.6% patients. Iman et al[19] found thrombocytopenia in CLD cases due to HCV infection in 32.3% patients. In present study, in age group 20-40 years, thrombocytopenia was found in 14(26.92%) patients while in age group 41-60 years, thrombocytopenia was seen in 34(34.69%) patients. No statistically significant association of thrombocytopenia with age group was detected with p value 0.332. Male patients were 93(62%) and female patients were 57(38%). Thrombocytopenia was found in 30(32.26%) male patients and in 18(31.58%) female patients. Association of thrombocytopenia with gender was not statistically significant with p value 0.931. Nawaz et al[13] found thrombocytopenia in 57.3% male patients. In same study most of the cases belonged to 5th decade. In one study[20] thrombocytopenia was noted in 13.3% patients. In same study, males were more affected than females. In one study conducted in Peshawar reported insignificant association between thrombocytopenia and gender[19].

CONCLUSION

Results of present study revealed that higher proportion of hepatitis C patients found with thrombocytopenia. Most of the patients belonged to 4th and 5th decade. Higher number of male patients were victim of hepatitis C infection as compared to female patients. Most of the patients were obese. Higher number of patients were normotensive and non-diabetics.

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