

FREQUENCY OF THROMBOCYTOPENIA IN HEPATITIS C PATIENTS

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ABSTRACT

Objectives: To determine the frequency of thrombocytopenia in chronic HCV positive patients .

Material and Methods: In this study a total of 138 patients with hepatitis C , referred from other units of Hayatabad Medical Complex were included in the study October 2016 to April 2017. After the explanation of the study, written informed consent was obtained from each study subject. 2ml blood sample was collected in the EDTA tube. Complete blood count showing platelet count was obtained through Sysmex analyzer (Japan). The peripheral smear was made to look for the exact count of platelets. Demographic and clinical data of the patient including age, socioeconomic status, occupation, and education level gender and platelet count were recorded and entered in a predesigned proforma. The diagnosis of HCV status was done on ELISA and confirmed on PCR.

Results: Our study shows that mean age was 39 years with SD \pm 10.24. Fifty nine percent patients were male and 41% patients were female. More over 22% patients had thrombocytopenia and 38% patients did not have thrombocytopenia.

Conclusion: The frequency of thrombocytopenia was significantly higher in patients presenting with hepatitis C virus infection.

Keywords: Complete blood picture, thrombocytopenia, Chronic Hepatitis C infection.

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INTRODUCTION

Liver is infected by different types of viruses including Hepatitis C virus (HCV). Globally about 270-300 million people worldwide are infected with HCV.¹ According to WHO, the worldwide prevalence of HCV infection is 3.1%, lower America and Europe i.e. 1.7% and 1.03% respectively while highest in Africa i.e. 5.3%. Chronic Hepatitis C infection is a serious health problem in Pakistan with prevalence rate of about 4-6%.² Chronic HCV infection is linked with various extra hepatic manifestations.³ The definitions of thrombocytopenia varies among different studies It ranges from \leq 100,000 cells/microliter to \leq 180,000 cells/microliter.⁴ Throm-

bocytopenia in HCV infections has been known since 1993.⁵ There is a complex and multifactorial process of development of thrombocytopenia in patients with liver disease due to Chronic HCV infection.^{6,7} The mechanisms involved in this process are; Portal hypertension and hypersplenism in cirrhosis, autoimmune conditions of platelets, HCV infection of platelets and megakaryocytes.⁸ The present study is hereby conducted so as to find out the frequency of thrombocytopenia in HCV positive patients in a tertiary care hospital of Peshawar.

MATERIAL AND METHOD

This cross-sectional study was conducted at Haematology Department, Hayatabad Medical Complex, Peshawar, Pakistan from 27th October 2016 to 27th April 2017. After taking informed consent, a sample of 138 patients with prior diagnosis of HCV with thrombocytopenia were selected through non-probability convenient sampling technique. The diagnosis of HCV status was done on ELISA and confirmed on PCR. Thrombocyto-

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Frequency of thrombocytopenia in hepatitis c patients

penia considered as a platelet count <150,000 cells/microliters. Complete blood count showing platelet count was obtained through Sysmex analyzer. The peripheral smear was made to look for the exact count of platelets. Demographic and clinical data of the patients were recorded and entered in a predesigned proforma. The study was analyzed using SPSS version 17.

RESULTS:

Frequency of thrombocytopenia among 138 HCV positive patients was analyzed as 30(22%) patients had thrombocytopenia and 108(78%) patients did not have thrombocytopenia. (table no 1)

Table No 1: Frequency of Thrombocytopenia in HCV Patients (n=138)

Thrombocyto- penia	Frequency	Percentage
Yes	30	22%
No	108	78%
Total	138	100 %

Gender distribution among patients with thrombocytopenia was found to be 60% in males and 40% in females. The age distribution among patients with thrombocytopenia was found to be 16.6% in 20-30years age group, 20% in 30-40 years age group, 33.3% in 40-50 years age group while 30% in 51-60 years age group. Duration of illness among patients with thrombocytopenia was found to be 66.6% in \leq 3 years and 33.3% in > 3 years. 36.6% HCV positive patients with thrombocytopenia were found employed and 63.3% were unemployed. 53.3% were having poor socioeconomic status, 36.6% were middle class while 10% were rich. 56.6% patients with thrombocytopenia were found illiterate while 43.3% were found literate. (table no 2).

DISCUSSION

Hepatitis C virus infection has become a global health and socioeconomic problem as 60-85% of infected persons develop chronic liver disease.² Thrombocytopenia is the most common hematologically abnormal condition in patients with chronic HCV⁴, which is observed in approximately 25% of patients.³

Table 2: Different characteristics of Thrombocytopenia in chronic Hepatitis C Patients(n=138)

Parameters	Frequency (n)	Percentage (%)	
Gender			
Male	18	60	0.9949
Female	12	40	
Different Age Group			
20 – 30 Years	5	16.6	0.9949
30 – 40 Years	6	20	
40 – 50 Years	10	33.3	
51 – 60 Years	9	30	
Duration of illness			
Less than or equal to 3 Years	20	66.6	1.0000
>3 Years	10	33.3	
Occupation			
Employee	11	36.6	0.8968
Unemployed	19	63.3	
Socioeconomic status			
Poor	16	53.3	0.9532
Middle class	11	36.6	
Rich	3	10	
Education level			
Illiterate	17	56.6	0.8700
Literate	13	43.3	

Our study shows that 22% HCV positive patients had thrombocytopenia and 78% patients didn't had thrombocytopenia. A study conducted at all medical units of Civil Hospital, Karachi in 2012 shows the frequency of thrombocytopenia was 53% (platelet count < 150,000 cells/microliter) and was most common in above 60 years of age.² Another study conducted at Department of Haematology, Benazir Bhutto Hospital Rawalpindi 2010, revealed thrombocytopenia in 25% newly diagnosed cases of Hepatitis C. There is a high frequency of presentation of thrombocytopenia in patients with hepatitis C.⁹ While another study carried out in Department of Haematology, Sheikh Zayed Hospital Lahore, 2010 shows that thrombocytopenia is a common complication in patients with chronic liver disease due to hepatitis C with a frequency of 22.6%.¹⁰

Similar results were observed in another study conducted by Louie KS et al in which intensity of thrombocytopenia is directly related to extent of damage liver parenchyma and development of fibrosis. The average prevalence of thrombocytopenia reported in a systematic review in patients of chronic HCV infection to be nearly 24%.¹¹

The almost similar results were observed in another study conducted by Bano S et al in which thrombocytopenia found to be 43.3% among patients with chronic HCV infections.¹²

Similarly average duration of illness was 3.06 ± 1.78 Years (Range 8 months to 9 Years) and average platelet count was 165156.74 ± 176324 .⁹ Seventy five patients (53%) had thrombocytopenia (platelet count < 150000/microl). The average age of thrombocytopenic patients was 48.53 ± 12.34 years and duration of illness was 3.7 ± 1.81 years. Regarding child Pugh class, 35(24.8%) cases had in class A, 49(34.8%) in class B and 57(40.4%) in class C. Thrombocytopenia was most common in above 60 years of age that is 10.7% (8/75) and 22.7% to 32% in all age groups.¹³

In a study conducted in Tehran, the frequency of thrombocytopenia was found to be 13.3% which was higher as compared to controls. The variability in underlying mechanism for development of thrombocytopenia in chronic HCV patient is found in various studies.¹⁴ These mechanisms involve sequestration of platelets in enlarged spleen¹⁵, autoimmune reaction to platelets^{16,17} and direct infectio of platelets¹⁸.

In few other studies conducted, 10.2% patients of chronic HCV infections showed platelets count less than 100,000/mm.^{19,20}

CONCLUSION

The frequency of thrombocytopenia was clinically

significant in patients presenting with HCV infections. This warrants a close follow up of patients with chronic HCV infections during management with special attention to status of platelet counts.

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Frequency of thrombocytopenia in hepatitis c patients

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

Rahman S: Conceptualization, Data Collection, Manuscript Writing.

Rahman S: Data analysis Manuscript, writing Proof Reading.

Khan S: Review of manuscript, Proof Reading.

Ahmad N: Literature Review.

Rahman N: Data Analysis.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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