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A CROSS SECTIONAL STUDY TO KNOW FREQUENCY OF THROMBOCYTOPENIA IN CHRONIC DYNAMIC HEPATITIS C PATIENTS AND DIFFICULTY IN TREATMENT

Dr.Aleena Sadat Nazeef [1], Dr Ayesha Asad [2], Dr Iqra Farooq [3]

[1, 3] Rawalpindi Medical College, Rawalpindi, [2] Army Medical College, Rawalpindi

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Abstract:

Objective: *We aimed in this analysis to describe the rate of Thrombocytopenia in long lasting dynamic hepatitis C occurred due to hepatitis C virus HCV.*

Study design: *Cross Sectional study.*

Place and duration of study: *This analysis was conducted in the Hematology department of Holy Family Hospital in Rawalpindi for a duration of 6 months from June 2018 to December 2018.*

Methodology: *A total number of 150 patients were analyzed in this study. The HCV was suggested to be the major etiological cause of Chronic liver disease. Thrombocytopenia was a usual complexity in chronic liver disease (CLD) cases which was found in patients with the percentage of 76.0 %. This happens because of the destruction of bone marrow and splenic platelet confiscation through antiviral treatment and Chronic hepatitis C. Necessary information of patients like name, age and address was collected and samplings was taken and tested for complete blood count (CBC) and platelet count (PLT). Sysmex XT 1800i was used for this analyzation. The total gathered data was inserted into the SPSS 10.0 and was studied by its package of statistics. Age was shown as average and Standard deviation SD and gender and platelet count was presented as frequency and percentages.*

Results: *The patients of current study were 150 in number and comprised of female and male as 99 and 51 with the percentage of 66.0 % and 34.0 % respectively. Limit of age was from 18 years to 78 years. Average was 41.9 ± 12.8 years of age. Maximum patients were in last stage of life. Average platelet count was 41.9 ± 77.3 x 109/1 where range was 150.0 to 400.0 x 109/1. Thrombocytopenia was existing in number of 34 patients out of total with the percentage of 22.6 %.The separation of patients was made into two groups based on their age. Group A was consisting of patients having age more than or equal to 40 years and Group B consists of patients with age less than 40 years, Group A and Group B have 87 and 63 number of patients with the percentage of 58.0 % and 42.0 % respectively out of 150 patients in this study. Group A with the percentage of 26.4 % have most usual thrombocytopenia versus Group B with the percentage of just 17.4 % of thrombocytopenia.The outcomes of the current analysis shown the percentage of 22.6 % as the rate of thrombocytopenia in the patients of Chronic Active Hepatitis (CAH).As the rates were studied through chi square and T-test, the maximum degree and ratio of thrombocytopenia in Group A was gotten indefinite according to statistics.*

Conclusion: *It is found that diagnosis of HCV associated with thrombocytopenia is in accordance with the rule that suppression of Hepatitis C virus (HCV) infection would be predicted as reduction of thrombocytopenia. For the procession of diagnosis without any interference, the patients require hematological growth element who were progressing the deviations of hematology.*

Key Words: *Thrombocytopenia, Hepatitis C, Chronic Active Hepatitis (CAH), Hepatitis C virus (HCV).*

Corresponding author:
Dr.Aleena Sadat Nazeef,
Rawalpindi Medical College, Rawalpindi.

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INTRODUCTION:

The major cause of chronic liver ailment is suggested to be the Hepatitis C virus and evaluated for approximately 70.0 % to 75.0 % of chronic hepatitis patients and patients of hepatocellular carcinoma with the percentage of 15.0 % to 20.0 % [1]. Virus of hepatitis is maximum prevalence in Pakistan. The death ratio because of hepatocellular carcinomas and liver failure and out of the world, Pakistan contains the maximum loads of chronic hepatitis. The calculated frequency of Hepatitis C was ranging from 0.3% to 31.9 % however the frequency and risk influences of Hepatitis B and C are not definitely existed. The values of the high-risk subgroups were most maximum [2].

The frequency of individuals in a population that have specific element in their blood serum of hepatitis C between donors of blood was ranging from 0.27 % to 6.8 % in various areas of country [3]. Hematological reactions are relative to CAH. The reactions are because of the disease and caused due to outcomes of its complexity and associated with treatment [4]. The usual complexity of chronic liver disease (CLD) is the thrombocytopenia where the platelet count is >150.0 x 109.0/1 and it is found in patients with the percentage of 76.0 % [5,6]. The harshness of thrombocytopenia is different in state of impending life else than to be remote and transient [7].

The major area of the progression of thrombopoietin (TPO) is liver. A basic enhancer of megakaryopoiesis and progression of platelet in the body and glycoprotein is thrombopoietin. The intensity of thrombopoietin and platelet count is maximum associated with impairment of function of liver and harshness of hepatic fibrosis in endurable effect of HCV [8, 9]. The HCV associated with thrombocytopenia is observed to haver antigens of cardiolipin and serum cryoglobulin [10,11]. Else mechanisms, furthermore, are almost referral to take a part to have straight viral influences to megakaryocytes and progression of thrombocytopenia like autoimmune [12, 13]. The two more rapidly stated immune mechanisms representing the raised peripheral platelet separation in effected patients of HCV are the phagocytosis of platelets and irregularity of the host immune system generation the progression of auto antigens opposing the platelet glycoprotein and frequent combination of anti HCV antigen by the attachment of HCV to membrane of platelet [14].

A well-developed factor of chronic ITP known as CITP is Hepatitis C having no obvious hepatic ailment. Various analyses have stated the positive serology of HCV in approx. 20.0 % of patients by the clinical treatment of CITP [15]. The diagnosis of HCV associated to thrombocytopenia is variant of CITP. A factor of 10.0 % to 50.0 % fall in platelet counts is almost observed as Interferon method. It is most harsh with PEG interferon and RBV method and vilest to PEG interferon therapy which is administered by itself. As a comparison of the patients diagnosed by PEG alpha 2a and RBV and the patients with percentage of 1.0 % that are diagnosed with RBV and standard IFN the decrease in medication is required for the treatment of patients with the percentage of 3.0 % to 4.0 % which are diagnosed with RBV and PEG [16]. The patients that are rarely having production of autoimmune thrombocytopenia by IFN and the patients having progressed cirrhosis are mostly found to have the harsh thrombocytopenia [17].

The daily treatment of CAH patients is influenced by thrombocytopenia strongly delaying or changing the treatment and medication methods consisting of anti-viral treatment, signified medically or elective operations and liver biopsy [18]. The aim of this analysis was to predict the rate of thrombocytopenia in CAH patients influenced by the Hepatitis C virus HCV.

METHODOLOGY:

A total number of 150 patients were analyzed in this study. The HCV was suggested to be the major etiological cause of Chronic liver disease. Thrombocytopenia was a usual complexity in chronic liver disease (CLD) cases which was found in patients with the percentage of 76.0 %. This happens because of the destruction of bone marrow and splenic platelet confiscation through antiviral treatment and Chronic hepatitis C. The hepatitis C active patients on diagnoses were treated through HCV-RNA were studied in this analysis and the patients of hepatitis C with cirrhosis, CAH with parallel hepatocellular carcinoma or other distortions, alpha 1 antitrypsin shortage, alcoholism, Wilson's ailment and autoimmune and Hepatitis B surface antibodies positive patients were not included in this analysis.

Necessary information of patients like name, age and address was collected and samplings was taken and tested for complete blood count (CBC) and platelet count (PLT). Sysmex XT 1800i was used for this analyzation. The total gathered data was inserted into the SPSS 10.0 and was studied by its package of statistics. Age was shown as average and Standard deviation SD and gender and platelet count was presented as frequency and percentages.

RESULTS:

The patients of current study were 150 in number and comprised of female and male as 99 and 51 with the percentage of 66.0 % and 34.0 % respectively. Limit of age was from 18 years to 78 years. Average was 41.9 ± 12.8 years of age. Maximum patients were in last stage of life. Average platelet count was 41.9 ± 77.3 x 109/1 where range was 150.0 to 400.0 x 109/1. Thrombocytopenia was existing in number of 34 patients out of total with the percentage of 22.6 %. Male patients were 16 out of 34 patients and female were 18 out of 34 patients with the percentage of 47.06% and 52.94% respectively. In females, thrombocytopenia was a little usual in a comparison of males but the variation was indefinite according to statistics where the value of P was equal to 0.104. Average platelet count in male and female thrombocytopenic patients was 98.75 ± 28.73 x 109/1 and 95.88 ± 42.72 x 109/1 respectively and the variation was indefinite according to statistics.

The separation of patients was made into two groups based on their age. Group A was consisting of patients having age more than or equal to 40 years and Group B consists of patients with age less than 40 years, Group A and Group B have 87 and 63 number of patients with the percentage of 58.0 % and 42.0 % respectively out of 150 patients in this study. Group A with the percentage of 26.4 % have most usual thrombocytopenia versus Group B with the percentage of just 17.4 % of thrombocytopenia. As a matching of Groups, Group A and Group B, the average platelet count was minimum in Group A than Group B. As the rates were studied through chi square and t-test, the maximum degree and ratio of thrombocytopenia in Group A was gotten indefinite according to statistics. All the above given details are shown below in following tabular forms.

Table No 01: Platelet Count

No of patients	Average of platelet count	Percentage
34	Platelet ≤ 150 x 109.0/1	22.6 %
116	Platelet > 150 x 109.0/1	77.3 %

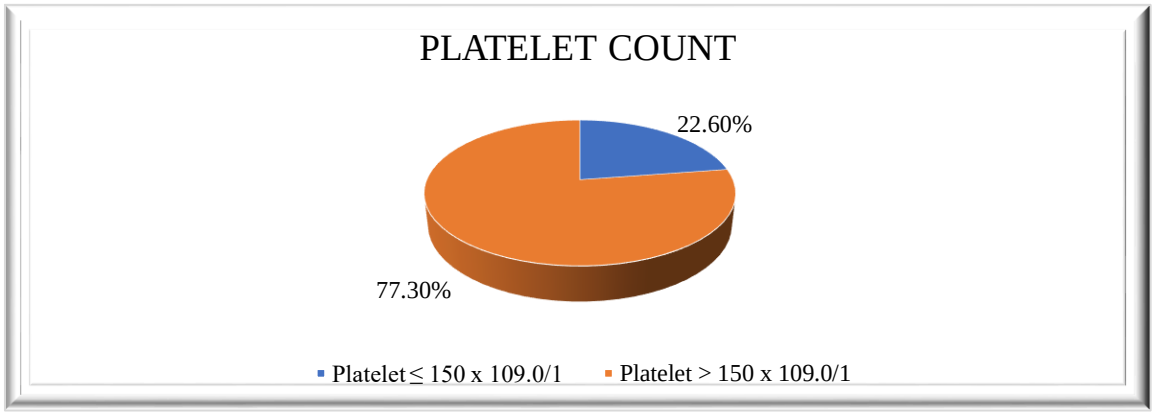


Table No 02: Average Matching of Platelet Counts in Thrombocytopenic Patients

Gender	Thrombocytopenic cases (n=34)	Percentage	Average	SD	Value of P
M	16	47.06%	98.75	28.73	0.823
F	18	52.94%	95.88	42.72	

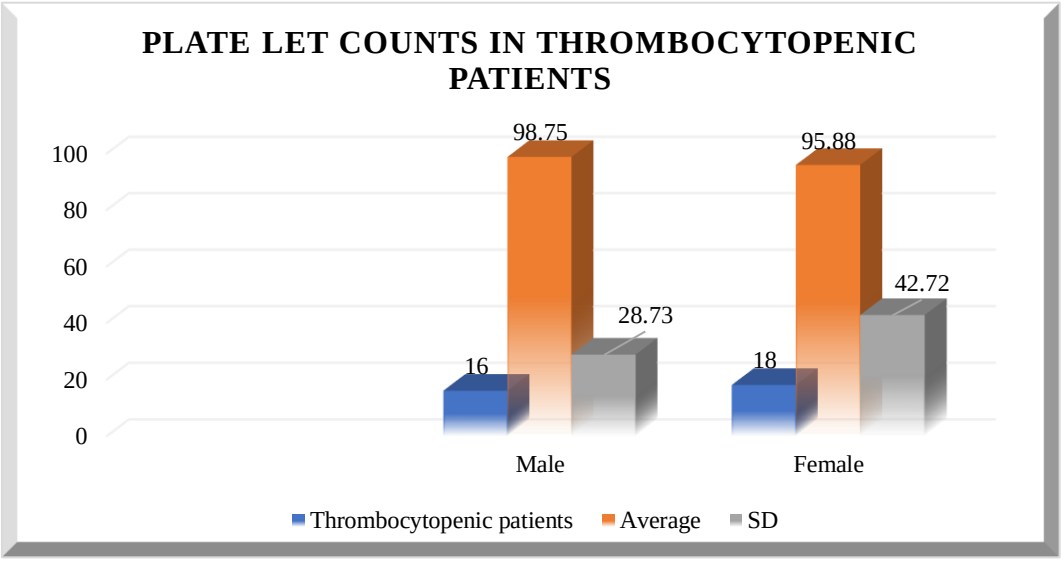
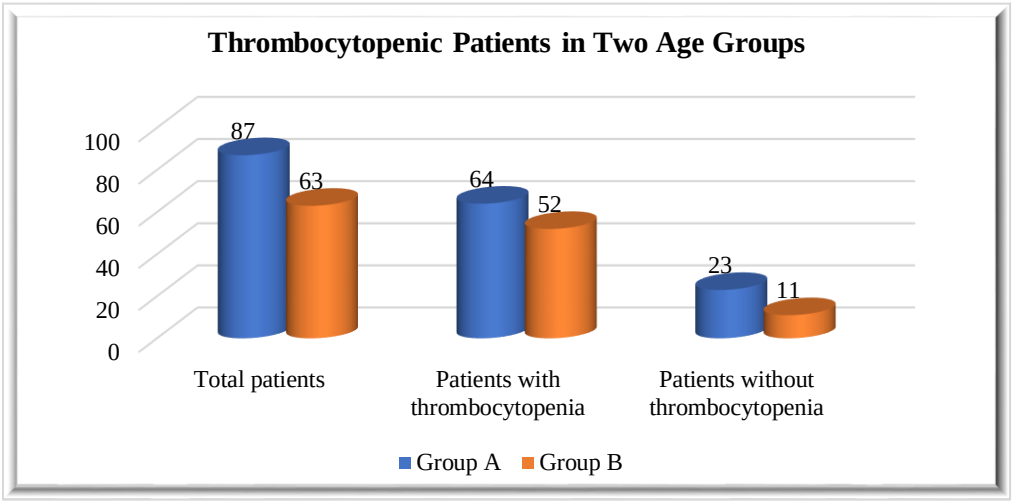


Table No 03: Ratio Matching of Thrombocytopenic Patients in Two Age Groups

Groups	Total patients	Age	Patients with thrombocytopenia	Percentage	Patients without thrombocytopenia	Percentage	Value of P
A	87	≥40 years	64	73.6 %	23	26.4 %	0.272
B	63	<40 years	52	82.5 %	11	17.5 %	



DISCUSSION:

Thrombocytopenia was observed in patients with the percentage of 22.6 % through our analysis. As a comparison between males and females with the percentage of 31.4 % and 18.2 % respectively, it was most usual in male patients and as comparison of Group A and Group B with the percentage of 26.4 % and 17.5 % respectively, it was more in Group A as compared to Group B but the variation was indefinite according to statistics. The ratio of thrombocytopenia in positive HCV cases was found having percentage of 10.2 % through an analysis based on community made by Wang CS et al in Taiwan. A maximum percentage that is 22.6 % was presented in thrombocytopenia patients through our analysis. For the prediction of thrombocytopenia, the platelet count was minimum which is 100.0 x 109.0/1 as a comparison of their analysis with our analysis which is 150.0 x 109.0/1.

The average of platelet count in positive HCV cases in their analysis was near to our analysis that was 180.0 x 109.0/1 near to 198.0 x 109.0/1 respectively. The average of platelet count in positive HCV was maximum as compared to negative HCV patients which is 234.0 x 109.0/1 where the value of P was less than or equal to 0.001 which was stated by them. Between positive HCV patients 4.0 % had thrombocytopenia where the platelet was less than 100,000 through an analysis by Streiff et al which is presented to be the most minimum ratio as compared to our analysis [19]. No positive HCV patients were on diagnosis and have minimum cut off platelet count on through this analysis which is analyzed based on number of people for the prediction of thrombocytopenia which is 100.0 x 109.0/1 as an alternative to range of 150.0 x 109.0/1. The bareness of hematological observations was degraded because of the statistic that most of the patients having progressed hepatitis were mostly treated in hospital and therefore unavailable for the analysis based on number of people.

CONCLUSION:

For the procession of diagnosis without any interference, the patients require hematological growth element who were progressing the deviations of hematology. It is found that diagnosis of HCV associated with thrombocytopenia is in accordance with the rule that suppression of Hepatitis C virus (HCV) infection would be predicted as reduction of thrombocytopenia. Therefore, common method for the diagnosis of HCV associated with thrombocytopenia is to regulate the IFN treatment but decrease its medication if the platelet count gets down. If by the decrease of medication, thrombocytopenia remains still then other diagnosis as thrombopoietic progression elements would be suggested, but in our number of people an analysis is required to find the reactions of these thrombopoietic representatives therefore diagnosis should be processed without any limitation.

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