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STUDY TO KNOW THE PREVALENCE OF VARIOUS TYPES OF BLEEDING DISORDERS

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Abstract:

Objective: *To determine the frequency and type of various bleeding disorders in hematology patients who enter the medical ward.*

Study Design: *A Cross-sectional and observational study.*

Place and Duration: *In the Medicine Unit II and Hematology department of Services Hospital Lahore for one year period from June 2017 to June 2018.*

Methodology: *All patients who had bleeding and who admitted in the medical and hematology department during the study were included in the study with undesirable probability sampling. Fifty patients were found to meet the diagnostic criteria for the study.*

Results: *There are many underlying causes of bleeding disorder, one has been investigated. In 50 cases, idiopathic thrombocytopenic purpura is the most common bleeding disorder, followed by bone marrow failure, coagulation disorders and liver disorders.*

Conclusion: *Bleeding disorder with different etiologies in patients with excessive bleeding in medical and hematology had been investigated. Further studies are needed to investigate these underlying disorders.*

Key words: *Chronic liver disease, idiopathic thrombocytopenic purpura, activated partial thromboplastin.*

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INTRODUCTION:

Excessive bleeding is a common cause of urgent and intensive care units in any hospital. Heavy bleeding is associated with high morbidity and mortality. Among the applications in medical services, various hematologic disorders such as platelet defects and bone marrow diseases are followed by acute and chronic liver diseases. In a country like Pakistan, the prevalence of hepatitis C is high and this is the main cause of bleeding. It is an important site for the synthesis of coagulation factors other than proteins, factor viii, coagulation inhibitors and proteins in the fibrinolytic system. In addition, platelets are affected by increased consumption and decreased production due to liver consumption. This is a cross-sectional, descriptive study conducted by the Department of Hematology and Medicine.

MATERIALS AND METHODS:

This Cross-sectional and observational study was held in In the Medicine Unit II and Hematology department of Services Hospital Lahore for one year period from June 2017 to June 2018. All patients who had bleeding and who admitted in the medical and hematology department during the study were included in the study with undesirable probability sampling. Fifty patients were found to meet the diagnostic criteria for the study.

A detailed history of fever was performed; weight loss (about 10% in the last six months); minor trauma, nosebleed, gingival bleeding, hematemesis, hemoptysis, hematocezia, malena, hematuria, menorrhagia, cuts or excessive bleeding after surgery. General physical examination including pallor; signs of bleeding on the skin (eg, bruising and purpura), nasal bleeding, oral cavity, vagina, anal canal; Accessible lymphadenopathy in the cervical, axillary and inguinal region. Abdominal examination revealed hepatomegaly and splenomegaly and was confirmed by abdominal ultrasound. The cause of bleeding at each time was established with the help of the following research. Venous blood samples (2 ml) were taken and analyzed in Sysmex KX 21 to make a complete blood count (CBC). Blood films were stained with May-Grunwald stain-Giemsa and examined for any evidence of peripheral smear thrombocytopenia, abnormal platelet morphology and bone marrow failure. Another 1.8 ml of prothrombin time (PT) was tested, partial truboplastin time (PTT) was calculated, and the international normalization index (INR) was calculated. For long-term coagulation results, correction studies were performed at normal 1: 1 ratio with 0 h and after incubation at 37 ° C for 120 minutes to eliminate inhibitors. The deficiencies of clotting factor assays were confirmed by factor analysis studies for platelet function, factor VIII and vWF levels, and von Willebrand disease diagnosis (VWD). Bone marrow aspirates were performed from the right posterior iliac crest. After staining-May-Grunwald Giemsa was performed in the aspiration, which is examined for evidence of dysplasia, red blood cells and marrow megakaryopoiesis. 500 myelograms cell were used to calculate the blast cells percentage. The blast cell line was confirmed by myeloperoxidase, non-specific esterase and periodic acid Schiff stains. Patients were divided into six groups according to the disease category given in Table I. Laboratory properties such as hemoglobin, total leukocyte count, platelet count for each group are shown in Table II.

RESULTS:

A total of fifty patients were identified in the critical or emergency care unit and their underlying causes were determined by various tests. Patients were divided into 6 groups as described in Table I, columns 1 and 2.

Table I (n=50)

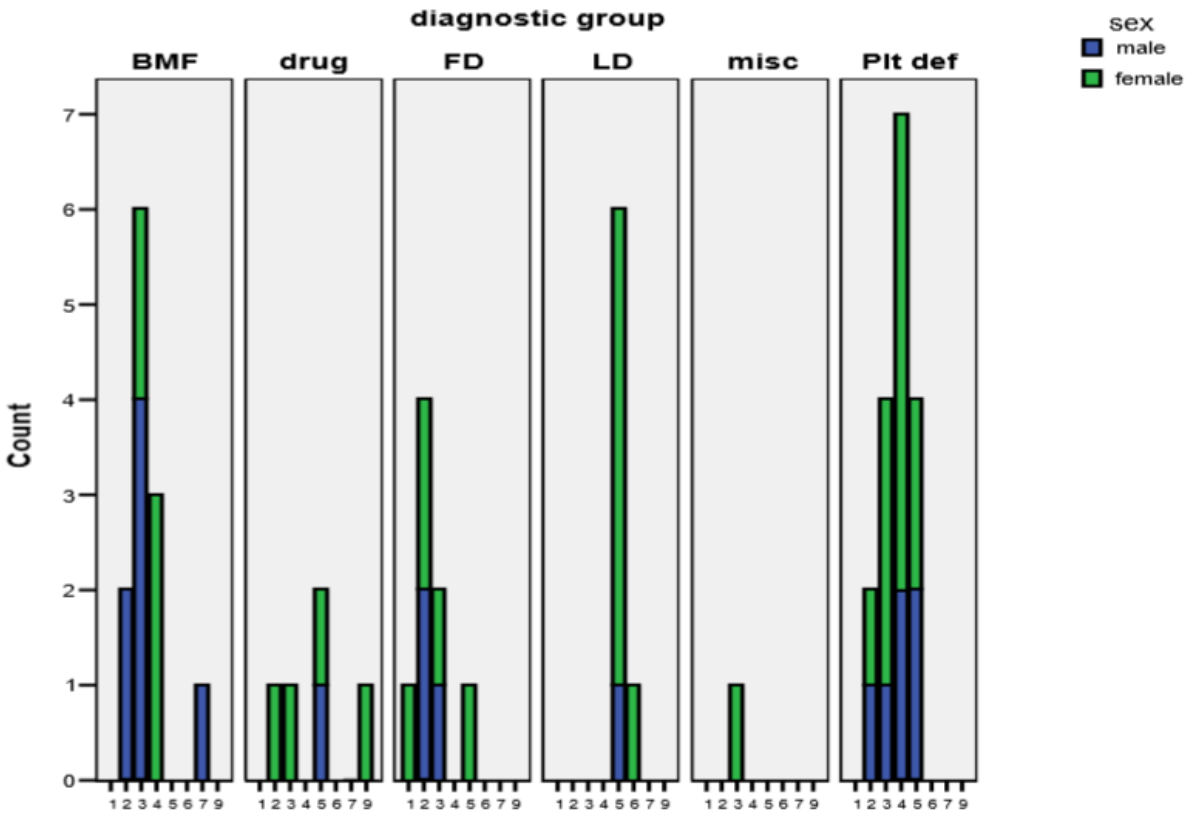
Diagnostic group	=n	Final diagnosis	=n
Platelet disorders	17	ITP	12
		Evans syndrome	1
		Gestational thrombocytopenia	1
		Bernard Soulier Syndrome	2
		Essential thrombocythemia	1
Bone marrow failures	12	Aplastic anaemia	5
		MDS	4
		Leukemia	3
Coagulation factor deficiency	8	vWD	4
		Hemophilia	3
		fact 13 deficiency	1
Liver disease	7	Cirrhosis	5
		Fulminant hepatic failure	2
Drug side effect	5	Anticoagulant	3
		Platelet antagonists	2
Miscella-neous	1	Polycystic ovary	1

Specific diagnosis was also classified as shown in Table I column. Number of patients was observed in the group with Evans1 syndrome, idiopathic thrombocytopenic purpura, pregnancy thrombocytopenia, Bernard Soier syndrome and essential thrombocythemia.

Table II

Diagnosis group	=n	age	Haemoglobin g/dl	TLC x 10^9/l	Platelet count x 10^9/l
Platelet disorders	17	32.2+/-10.2	9.8+/-2.7	7.6+/-3.1	70190+/-21394
Bone marrow failure	12	29.9+/-12.9	5.5+/-1.99	5.4+/-0.6	66500+/-180
Factor deficiency	8	19.6+/-9.8	8.2+/-2.9	5.5+/-0.9	262125+/-90308
Chronic liver disease	7	50.7+/-4.49	9.1+/-1.4	8.9+/-4.2	105142+/-30333
Drugs	5	44.6+/-2.3	6.5+/-3.2	11.3+/-2.7	353800+/-15193
Miscellaneous	1	25+/-0	10.9+/-0	6.7+/-0	350000+/-0
Total	50	33.4+/-15	8.15+/-2.9	7.3+/4.2	138864+/-19140

The second most common category for hemorrhage was aplastic anemia which was found to be the most frequent followed by myelodysplastic syndrome and leukemia. The underlying pathology was chronic liver disease with cirrhosis in 7 cases, but acute liver failure was only two cases. The lack of coagulation factor was the most common factor deficiency was von Willebrand disease, followed by hemophilia3 and factor xiii deficiency. Iatrogenic group included drugs such as anticoagulants and thrombocyte antagonists showing 5 severe bleeding episodes. Distribution by sex showed that there were 18 males and 32 females. In men, in the first 2 years of life, in the 2nd or 4th decade, he presented with bone marrow failure, disease or platelet defect. In women, bone marrow failure is seen in the second and third decades, including drug overdose, factor deficiency, and platelet defects.



When the meaning of the two tails of the paired t-test was calculated for the age and type of presentation, the p value was less than 0.001. Secondary bone marrow failure and ITP causes were found to be 30 years and the hereditary causes of coagulation factor deficiency were seen in the second decade. When the main underlying disease was considered to be VWD, the most common case was menorrhagia in 2 cases and intraperitoneal bleeding in 2 cases due to luteal cyst. Two patients with factor xiii deficiency presented with intracranial hemorrhage and hemophilia after trauma in 2 cases and in one case after tooth extraction. The most common diagnosis was ITP. The average age of ITP was 30.55. Hemoglobin was 9.49 +/- 2.8; TLC was 6.93x109 / L; the platelet count was 13454.5 +/- 9092.5 and severe menorrhagia in women and males in males as upper GI hemorrhage. Cirrhosis is the two cases with underlying disease and fulminant hepatic insufficiency and significant coagulopathy in 5 cases resulting in bleeding of the gastrointestinal tract.

DISCUSSION:

Recent evidence suggests that a change in our previous understanding of the pathophysiology of immune thrombocytopenia is evident. It is strongly believed that thrombocytopenia is only due to the destruction of platelets mediated by antibodies. The new information developed is that the same antibodies that mediate platelet destruction are also mediated by damaging megakaryocytes and / or mediating platelet production by inhibiting the ability to release plaquetas3. The exciting field of exploration covers the role of CD8 + cytotoxic reactive platelet cells. These cells are clearly present, but their clinical significance is unknown. Finally, an extensive research area covers regulator T cells that have been reported as lack of various studies in ITP. In our study, ITP was observed mainly in women with a mean age of 30 years. They conclude that the predominance of ITP in adults is predominant in younger women with bleeding: 1. In another study similar to the ratio of a peak to incidence and the rate of 3 women to the third decade of similar third decade, two sites in the study have found a similar clinical finding with bleeding in more than one region. The deficiencies of the coagulation factor were observed in 8 patients. In a study conducted in Rawalpindi of VWD, hemophilia A, followed by hemophilia, most commonly in 62% of patients with hemophilia, while only 18% of patients were found in VWD. In our VWD population, it is considered to be a less recognized entity. Bone marrow disorders were seen in 12 patients who had severe symptomatic thrombocytopenia. The mean platelet count for this group was 16000 / mm. The average Hb for this group was 5.5 g / dl. The number of platelets less than 10000 / microliter is associated with

spontaneous bleeding. Abnormalities of coagulation and thrombocytopenia are often observed in patients with chronic liver disease, or are carriers of HCV. Such patients have a higher incidence of bleeding events. Severe coagulopathy is seen in both acute and chronic liver disease. This explains the higher morbidity and mortality among these patients. Chronic liver disease is responsible for various hematological and coagulation disorders by various mechanisms. Thrombocytopenia due to increased splenic sequestration and low thrombopoietin levels is common in patients with chronic liver disease. Both leukopenia and leukocytosis are associated with a decrease in the survival of red blood cells that cause hemophytic anemia. In our study, we included a total of seven patients with chronic liver disease who were diagnosed with primary disease. Five patients had chronic liver disease and two of them had acute liver failure. All of them had thrombocytopenia. Therefore, retrospective studies show that bleeding disorders examined for any patient with bleeding in any part of the body are common. Bleeding diathesis contributes to the definitive diagnosis.

CONCLUSION:

Platelet disorders were the most common diseases in the selected patient population with bleeding and idiopathic thrombocytopenic purpura stood atop than other platelet defects. Twelve cases of bone marrow failure were the next common etiology for bleeding. In our patients, von Willibrand disease, hemophilia and factor VIII deficiency were diagnosed as coagulation defect. Coagulopathy was observed in patients with acute and chronic liver disease.

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