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Original Research Article

To find the correlation of the clinical findings with the hematological findings in patients with bleeding manifestations.

Dr. Akanksha Jain[1] (Demonstrator), Dr. Atishay Jain[2] (Assistant Professor) & Dr. Purti Agrawal Saini[3] (Associate Professor)

N.S.C.B. Medical College, Jabalpur[1]

Dept. of Medicine, N.S.C.B. Medical College, Jabalpur, M.P.[2]

Department of Pathology, Nandkumar Singh Chouhan Govt. Medical College, Khandwa, M.P.[3]

Corresponding Author: **Dr. Purti Agrawal Saini**

Abstract:

Background & Method: The aim of the study is to find the correlation of the clinical findings with the hematological findings in patients with bleeding manifestations. A blood pressure cuff inflates around the upper arm of patient. While the cuff is on the arm, a prick is given on the fingertip. It is just deep enough to cause a tiny amount of bleeding. The blood pressure cuff is immediately deflated. Blotting paper is touched to the cuts every 30 seconds until the bleeding stops. The time taken for the cuts to stop bleeding is recorded.

Result: Idiopathic thrombocytopenic purpura is more common in females (78%, as compared to males (22%). Similarly Systemic diseases causing bleeding manifestations are more common in females (63%) as compared to males (37%). But the same is not true in case of Aplastic anemia where males (71%) are more commonly affected than females (62%). While in case of haemophilia, the disease is 100%prevalent in males with 0% females.

Conclusion: It is also our observation that many patients having hemostatic disorders do not necessarily have prolonged bleeding or clotting time which means that hemostasis is dependent on many other unknown in vitro (technical considerations) or in vivo (over the counter drugs) factors. Among the bleeding disorders platelet disorders (74%) are more common than coagulation disorders (15%). 87% cases are found to share clinical & hematological findings while no correlation seen in 13% cases.

Keywords: clinical, hematological, bleeding & manifestations.

Study Designed: Observational Study.

1. Introduction

The human body cannot handle excessive blood loss well. Therefore, the body has ways of protecting itself. Hemostatis is one of them. When, for some unexpected reason, sudden blood loss occurs, the blood platelets kick into action[1].

When bleeding from a wound suddenly occurs, the platelets gather at the wound and attempt to block the blood flow. The mineral calcium, vitamin K, and a protein called fibrinogen help the platelets form a clot[2].

A clot begins to form when the blood is exposed to air. The platelets sense the presence of air and begin to break apart. They react with the fibrinogen to begin forming fibrin, which resembles tiny threads[3]. The fibrin threads then begin to form a web-like mesh that traps the blood cells within it. This mesh of blood cells hardens as it dries, forming a clot, or "scab."

Bleeding disorders constitute an important group of disorders in haematology. Abnormalities of platelet function & clotting factors are characterized by clinical bleeding of varying severity. All diseases of inadequate hemostasis have spontaneous bleeding (petechiae, purpura, mucous membranes, GI bleeding, hematuria, into joint spaces, or even just unusually heavy periods) and/or excessive bleeding after trauma or surgery[4]. The hemostatic system consists of platelets, coagulation factors, and the endothelial cells lining the blood vessels.

Clinical evaluation of a bleeding patient begins with taking a careful history, taking into account the patient's age, sex, clinical presentation, past history, drug history and family history. While a bleeding history is being elicited, attention should be directed to the type of bleeding present. Certain signs & symptoms are virtually diagnostic of disordered hemostasis[5&6].

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2. Material & Method

The present study is hospital based prospective being undertaken in the Department of pathology & Department of medicine (hematology). The cases presenting with bleeding manifestations in NSCB, Jabalpur, M.P. & the cases retrieved from the archives reporting for complete blood picture for 01 Year.
Bleeding time is a blood test that looks at how fast small blood vessels close to stop bleeding. This test helps diagnose bleeding problems.
Pre-requisites-Certain medications including dextran, nonsteroidal anti-inflammatory drugs (NSAIDs), and salicylates (including aspirin) may change the test results. So the patient should be told to stop taking these medicines if any, a few days before the test.
Procedure - A blood pressure cuff inflates around the upper arm of patient. While the cuff is on the arm, a prick is given on the fingertip. It is just deep enough to cause a tiny amount of bleeding. The blood pressure cuff is immediately deflated. Blotting paper is touched to the cuts every 30 seconds until the bleeding stops. The time taken for the cuts to stop bleeding is recorded.

3. Results

Table No. 1: Gender Distribution

Sex	Frequency in No.	%
Males	104	52
Females	96	48
Total	200	100

Out of 200 study cases, males are more commonly affected (52%) than females (48%).

Table 2: SEX DISTRIBUTION OF HEMATOLOGICAL DISORDERS

Hematological Disorders	No. of Cases
Idiopathic thrombocytopenic purpura	46
Aplastic anemia	28
Myelodysplastic syndrome	14
Acute myeloid Leukemia	10
Acute lymphoid Leukemia	10
Chronic myelogenous leukemia	04
Chronic lymphoblastic leukemia	02
Non Hodgkins lymphoma	02
Sickle cell anemia	10
Hemophilia	14
Disseminated Intravascular coagulation	04
Malaria	08
Nutritional anemia	06
Drug induced thrombocytopenia	04
Chemotherapy induced bone marrow suppression	04
Liver disease	10
Vitamin K deficiency	02
Other systemic causes	22

Idiopathic thrombocytopenic purpura is more common in females (78%, as compared to males (22%). Similarly Systemic diseases causing bleeding manifestations are more common in females (63%) as compared to males

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(37%). But the same is not true in case of Aplastic anemia where males (71%) are more commonly affected than females (62%). While in case of haemophilia, the disease is 100%prevalent in males with 0% females.

Table 3: SEX DISTRIBUTION IN INHERITED BLEEDING DISORDERS

Bleeding disorders	Males	% of males (n=104)	Females	% of females (n=96)
Inherited	18	17	06	6.25
Acquired	86	83	90	93.75
Total	104	100	96	100

Inherited bleeding disorders involve males (17%) more commonly than females (6.25%). However statistically no gender association could be obtained in inherited bleeding disorders as $P = 0.125$ ($P > 0.05$).

Table 4: DISTRIBUTION OF CASES ACCORDING TO TYPE OF BLEEDING DISORDERS

Type of bleeding disorder	**Total number of cases**	**%**
Platelet disorders	148	74
Coagulation disorders	30	15
Other Systemic causes	22	11
Total	200	100

Among the bleeding disorders platelet disorders (74%) are more common than coagulation disorders (15%). 87% cases are found to share clinical & hematological findings while no correlation seen in 13% cases.

4. Discussion

Idiopathic thrombocytopenic purpura (41.2%) was also the most common cause found in a retrospective study of thrombocytopenic patients, performed by Sunil R Bahl, Thomas A Vurgese,. The other common causes included chronic liver disease (12.7%), Heparin induced thrombocytopenia (7.9%), DIC and leukemia (6.3% each), aplastic anemia (3.3%) & Myelodysplastic syndromes (1.6%). Females (64.7%) were found to be affected with Idiopathic thrombocytopenic purpura 1.8 times more commonly than males (35.3%)[7].

Jennifer A. Bevan, Kelly W. Maloney retrospectively reviewed the charts of cases who presented with menorrhagia between January 1990 and November 1998 found that the most common causes were immune thrombocytopenic purpura followed by myelosuppression caused by chemotherapy[8].

E. Oral, A. Çağdaş, A. Gezer et al found the same results as our study where out of 7 diagnosed cases presenting with acute menorrrhagia, 4 (57%) cases were of immune thrombocytopenic purpura, two cases of Van Willebrand disease and one case of acute promyelocytic leukemia.

Similar findings were reported by Sunil R Bahl, Thomas A Vurgese, , where females (64.7%) were found to be affected with Idiopathic thrombocytopenic purpura 1.8 times more commonly than males (35.3%)[9]. Study done by Watts RG at Birmingham, USA. identified 51% female & 49% male among 409 cases of Idiopathic thrombocytopenic purpura.

5. Conclusion

It is also our observation that many patients having hemostatic disorders do not necessarily have prolonged bleeding or clotting time which means that hemostasis is dependent on many other unknown in vitro (technical considerations) or in vivo (over the counter drugs) factors. Among the bleeding disorders platelet disorders (74%) are more common than coagulation disorders (15%). 87% cases are found to share clinical & hematological findings while no correlation seen in 13% cases.

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