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To find the correlation of the clinical findings with Hematological findings of bleeding disorders subjects

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Abstract

Background and Method: Bleeding time is a basic 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, non-steroidal anti-inflammatory drugs (NSAIDs), and salicylates (including aspirin) may change the test results.

Result: Inherited bleeding disorders involve males (17%, n=104) more commonly than females (6%, n=96). However statistically no gender association could be obtained in inherited bleeding disorders as $P = 0.125$ ($P > 0.05$). Among 200 cases, 106 cases (53%) have mild anemia (Hb- 7-12 g/dl) while 80 cases (40%) presented with severe anemia (Hb- <7g/dl). 89% cases are found to share clinical & hematological findings while no correlation seen in 11% cases.

Conclusion: Our endeavor here is to evaluate bleeding disorders on the available resources in the department and help the clinicians to have an idea of the hematological changes seen on light microscopy, for deciding the treatment of the diseases. Of all the bleeding disorders, platelet disorders (74%) are more common than coagulation disorders (15%).

Keywords: correlation, hematological, bleeding and clinical

Introduction

The human body can't deal with extreme blood misfortune well. Subsequently, the body has mechanisms of securing itself. Hemostasis is one of them. When, for some startling explanation, unexpected blood misfortune happens, the blood platelets kick into action^[1]. When seeping from an injury abruptly happens, the platelets assemble at the injury and endeavour to hinder the blood stream. The mineral calcium, Vitamin K, and a protein called Fibrinogen help the platelets structure a coagulation.

Bleeding disorders are a set of conditions that occur when the blood cannot clot properly. In the normal clotting scenario, platelets, stick together and form a plug at the site of an injured blood vessel. Clotting factors in blood then interact to form a fibrin clot, essentially a gel like plug, which holds these platelets in place and allows healthy healing to occur at the site of the injury while disabling blood from escaping the injured blood vessel. Excessive clotting can lead to grave conditions such as Myocardial infarction and strokes. And the inability to form clots can be very hazardous as well, as it can cause excessive bleeding. Bleeding can be as a result of either less or abnormal high platelets, abnormal or low amounts of clotting proteins, or abnormal blood vessels. Bleeding problems establish a significant, serious consequences in hematology. Irregularities of platelet work and thickening elements are described by clinical seeping of changing severity^[2]. All the infections lacking hemostasis show unconstrained dying (petechiae, purpura, mucous layers, GI dying, hematuria, into joint spaces, or even abnormally weighty periods) or potentially inordinate seeping after injury or surgery^[3].

Clinical assessment of a bleeding patient commences with undertaking a cautious and complete history, considering the patient's age, sex, clinical show, previous history, drug history and family history^[4]. While a draining history is being inspired, consideration ought to be coordinated to the sort of draining present. Certain signs and indications are essentially demonstrative of disarranged hemostasis. These can be isolated into two gatherings - Those seen all the more regularly in coagulation issues and those seen all the more frequently in platelet problems and issues of the vessels. Symptoms of bleeding abnormalities mainly include: Bleeding gums, Easy bruising, excessive bleeding from minor cuts or post dental

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visit, Unexplained epistaxis, Heavy menstrual bleeding, Bleeding into joints, Postsurgical or postoperative bleeding.

Material and Method

The present study was conducted in department of Pathology at Lok Nayak Jai Prakash Hospital, New Delhi over a period of 02 Years & One Month from March 2018 to April 2020 with total no. of samples of 200 patients. 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 such as certain medications including dextran, non-steroidal 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.

Specimen is collected into EDTA Whole Blood (purple) vacutainer. (5 or 7ml volume)

- Blood smears must be made on a freshly collected specimen and must be prepared within four hours of collection.
- CBC samples must be received in the laboratory within 48 hours of collection.

Results

Table 1: Sex distribution in inherited bleeding disorders

Bleeding disorders	Males	% of males (n=104)	Females	% of females (n=96)
Inherited	18	17	14	06
Acquired	86	83	82	94
Total	104	100	96	100

Inherited bleeding disorders involve males (17%, n=104) more commonly than females (6%, n=96). However statistically no gender association could be obtained in inherited bleeding disorders as $P = 0.125$ ($P > 0.05$).

Table 2: 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%, n=100) are more common than coagulation disorders (15%, n=100).

Table 3: Hemoglobin level in study cases

Hb in g/dl	Total cases (n=200)
<7	80
7-12	106
>12	14

Among 200 cases, 106 cases (53%) have mild anemia (Hb- 7-12 g/dl) while 80 cases (40%) presented with severe anemia (Hb- <7g/dl).

Table 4: Clinico hematological correlation

Clinicohematological correlation	Total no. of Cases
Seen	178
Not seen	22

89% cases are found to share clinical & hematological findings while no correlation seen in 11% cases.

Discussion

In our examination among 200 cases we found, 40% (n=200) with Hb-<7g/dl, 53% (n=200) with Hb level between 7-12 g/dl, and staying 7% (n=200) have Hb>12%. In an investigation established 53% patients with hemoglobin levels between 4–6 gm/dl [5]. Additionally

discovered One portion of the all-out bunch with hemoglobin <12.0 g/dL while 10% had conceivably perilous frailty hemoglobin <5.0 g/dL).

We tracked down that greatest number of patients (22%, n=100) showing bleeding have platelet tally as < 20000/cu mm blood. Four out of six patients with frank bleeding were found to present with extreme thrombocytopenia (platelet tally, <20,000 per cubic millimeter), remembering a dangerous pneumonic discharge for one case [6].

Additionally, the study found 68% of the cases with platelet check beneath $20 \times 10^9/L$ having draining appearances. Comparable discoveries were accounted for, where 83% patients with platelet check < $20 \times 10^9/L$ (56% < $10 \times 10^9/L$), were found and practically all (97.5%) had just gentle draining manifestations while 2.5% had genuine draining symptoms [7]. In another investigation it is tracked down that in 76.6% scenes of seeping with the tally at > 10,000/microl no or just cutaneous blood loss were noticed (clinically gentle illness) contrasted with 59.45% scenes at $PC < 10,000/microl$ [8].

In this investigation we tracked down that 26% cases have presented with pancytopenia, including men (62%, n=26) more normally than women (38% n=26). Like our investigation they discovered 19% instances of pancytopenia where guys (62.9%) were more commonly influenced than females (37.1) and draining happened in 33.7% instances of pancytopenia. An investigation on pancytopenia likewise found that guys were (72.5%) more regularly influenced than females (27.5%) [9].

Conclusion

Our endeavour here is to evaluate bleeding disorders on the available resources in the department and help the clinicians to have an idea of the hematological changes seen on light microscopy, for deciding the treatment of the diseases. Of all the bleeding disorders, platelet disorders (74%) are more common than coagulation disorders (15%).

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