Original Article

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Retrospective Analysis of Patients with Bleeding Disorder Visited in Tertiary Care Hospital

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Abstract

Background: Hemostasis is the procedure by which bleeding is stopped after injury to vasculature. There is an increasing incidence of patients with bleeding disorders among general population. Hence; the present retrospective was planned for assessing the patients with bleeding disorder Visited in Tertiary Care Hospital. **Subjects and Methods:** Data of a total of 53 consecutive patients who were referred to the Department of General Medicine, GMERS Medical College & Hospital, Himmatnagar, Gujarat, (India) with abnormalities in prothrombin times, partial thromboplastin times, or closure times were included in the present study. Complete demographic, clinical and past medical history of all the patients were obtained from their record files. Patients with incomplete record files were excluded from the present study. Out of these 53 patients, 49 patients underwent further specific diagnostic testing. **Results:** 18 patients had low von Willebrand factor levels, while 8 patients had platelet aggregation disorders. Hemophilia was found to be present in 12 patients. Factor VII deficiency was found to be present in 7 patients while factor XI deficiency was found to be present in 4 patents. **Conclusion:** The laboratory investigation starts with the performance of the "hemostasis screen". Therefore; adequate hematological investigations should be carried out in all suspected patients for reaching the final diagnosis.

Keywords: Bleeding, Disorder, Platelet.

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Introduction

Hemostasis is the procedure by which bleeding is stopped after injury to vasculature. It is a delicate multiphase process that involves interactions between the blood vessels, platelets and coagulation factors. Patients with a bleeding diathesis remain a diagnostic challenge in medicine.[1,2] Many healthy individuals consider their bleeding and bruising excessive, whereas patients with mild to moderate abnormalities may not recognize subtle symptoms as abnormal. Distinguishing between these two groups of patients requires skill and experience and often cannot be done with certainty.[3,4] On the other hand; patients with profound coagulation disorders and obviously abnormal bleeding symptoms may not volunteer information unless specifically questioned. In the present scenario, there is an increasing incidence of patients with bleeding disorders among general population.[5-7] Hence; under the light of above mentioned data, the present retrospective was planned for assessing the patients with bleeding disorder visited in hospital.

Subjects and Methods

Data of a total of 53 consecutive patients who were referred to the Department of General Medicine, GMERS Medical College & Hospital, Himmatnagar, Gujarat, (India) with abnormalities in prothrombin times, partial thromboplastin times, or closure times were included in the present study. Ethical approval was obtained from institutional ethical committee before the starting of the study. Complete demographic, clinical and past medical history of all the patients were obtained from their record files. Patients with incomplete record files were excluded from the present study. Out of these 53 patients, 49 patients underwent further specific diagnostic testing. Results of further test were also obtained from their record file. All the results were summarized in Microsoft excel sheet followed by analysis with SPSS software.

Results

In the present study, initially 53 patients were included. Among these 53 patients, 49 patients underwent further specific diagnostic testing. So, final sample size for the present study was 49 patients. Among these 49 patients, 18 patients had low von Willebrand factor levels, while 8 patients had platelet aggregation disorders. Hemophilia was found to be present in 12 patients. Factor VII deficiency was found to be present in 7 patients while factor XI deficiency was found to be present in 4 patents. Majority of the patients

of the present study belonged to the age group of 20 to 40 years.

Table 1: Distribution of patients with bleeding disorders

Bleeding disorder	Number of patients	Percentage of patients
Hemophilia	12	24.49
von Willebrand disease	18	36.73
Platelet aggregation disorders	8	16.33
Factor VII deficiency	7	14.29
Factor XI deficiency	4	8.16
Total	49	100

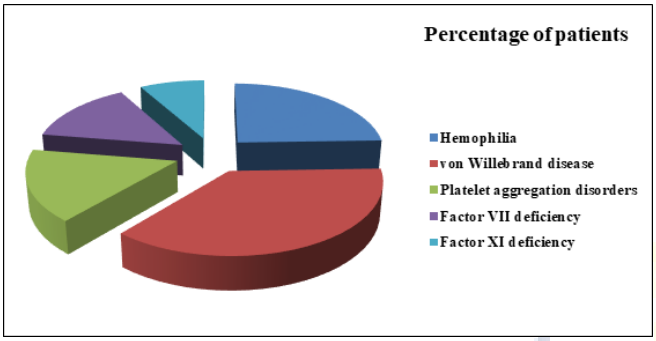

Figure 1: Distribution of patients with bleeding disorders

Discussion

A defect in any of these phases of coagulation can result in a bleeding problem which may be inherited or acquired. This process of coagulation is a combination of cellular and biochemical events that function together to keep blood in the fluid state within the vessels and prevent blood loss following injury by the formation of a stable blood clot. Blood clots are eventually dissolved by the fibrinolytic system, a complex but well-regulated system dependent also on several other additional systems.6-8 Abnormalities of platelet function are characterized by clinical bleeding of varying severity. In most cases, patients present with mucocutaneous bleeding or excessive hemorrhage following surgery or trauma.[9] Hence; under the light of above mentioned data, the present retrospective was planned for assessing the patients with bleeding disorder visited in hospital.

In the present study, initially 53 patients were included. Among these 53 patients, 49 patients underwent further specific diagnostic testing. So, final sample size for the present study was 49 patients. Among these 49 patients, 18 patients had low von Willebrand factor levels, while 8 patients had platelet aggregation disorders. Hemophilia was found to be present in 12 patients. The bleeding time (BT) test has also been widely utilized as a means of accessing primary hemostatic response (platelet-injured vessel wall interaction). Unfortunately, the BT is relatively insensitive and, in many cases, nonspecific with respect to identifying abnormalities of primary hemostasis.10 Mild bleeding problems can be inherited or acquired. The inherited causes include partial deficiencies of coagulation factors and fibrinolytic proteins, and defects or deficiencies in von Willebrand factor and platelets and connective tissue problems (e.g., Ehler-Danlos syndrome). Abnormalities in von Willebrand factor are among the most common inherited causes, although platelet defects are also fairly common.[11,12] Most causes of abnormal bleeding can be determined from a complete blood count including platelet count and bleeding, prothrombin, activated partial thromboplastin, and thrombin times. Occasionally, further evaluation is necessary, such as tests of factor XIII function, fibrinolysis, and vascular integrity. Possible diagnoses include disseminated intravascular coagulation, thrombotic thrombocytopenic purpura, vitamin K deficiency, von Willebrand's disease, heparin-induced thrombocytopenia, acquired inhibitors of factor VIII, lupus anticoagulants, and coagulation disorders related to the acquired immunodeficiency syndrome.[7-9] Patients, usually, have changes in heart rate, blood pressure, slow capillary refill time, tachypnea, change in temperature, decreased urine output and altered blood gas analysis. Some of the features like haemodynamic changes, urine output and blood gas alteration, may be late signs. Prompt identification of unstable patients and resuscitation is necessary. Haemoglobin and coagulation variables should be checked. Blood and its products should be available and transfused when necessary.

In the present study, factor VII deficiency was found to be present in 7 patients while factor XI deficiency was found to be present in 4 patents. Majority of the patients of the present study belonged to the age group of 20 to 40 years. Knol HM et al assessed the prevalence of underlying bleeding disorders in women with heavy menstrual bleeding (HMB) with and without gynecologic abnormalities. Bleeding disorders play an equally important role in the cause of both unexplained and explained heavy menstrual bleeding.[11] In a previous study conducted by Shaw PH et al, authors analyzed 48 consecutive referrals for abnormal prothrombin times, partial thromboplastin times, or closure times obtained as preprocedural screens. Patients were evaluated by uniform diagnostic testing. Seventeen patients (35%) had an isolated nonspecific inhibitor (NSI). Six patients (12.5%) presented with mildly low factor activity with a concomitant NSI. These deficiencies were of unclear clinical significance. One patient (2%) had a lupus anticoagulant. Only 9 patients (19%) had a possible or true mild bleeding disorder: 5 patients (10%) had isolated low von Willebrand factor levels, 2 patients (4%) had possible type I von Willebrand disease, and 2 (4%) had platelet aggregation disorders. In all patients, personal and family bleeding history had a positive predictive value of 45% for hemostatic disorders. The most common diagnosis among the patients referred to us for abnormal preoperative coagulation tests was a NSI, which is not associated with an increased risk of operative bleeding complications.[12]

Conclusion

Under the light of above obtained results, the authors

concluded that bleeding disorders are relatively uncommon, and most bleeding episodes occur as a result of local factors. The laboratory investigation starts with the performance of the "hemostasis screen". Therefore; adequate hematological investigations should be carried out in all suspected patients for reaching the final diagnosis. However; further studies are recommended.

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