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ORIGINAL ARTICLE

Bleeding Disorders among women Presenting with Menorrhagia at Tertiary Care Hospital

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ABSTRACT

Objective: To study the spectrum of bleeding disorders among women, presenting to the study setting with complaints of menorrhagia.

Methodology: This observational cross-sectional study was conducted up on 121 women, during a period of 6 months, who were approached via non-probability, consecutive sampling, presenting to the Dept. of Gyneacology & Pathology – Liaquat University Hospital, Hyderabad with menorrhagia. Data obtained from patient interviews and laboratory investigations were recorded into a self-structured questionnaire after taking written informed consent. The data obtained was analyzed using SPSS v. 21.0.

Results: The mean age of the women was 28.13 years (±5.21 SD). Among the underlying hemostatic pathologies, VWD was the most common i.e. 21 (65.6%), followed by other platelet dysfunctions (Glanzman Thrombasthenia (n=5, 15.6%) and Berard Soulier Syndrome i.e. n=3, 9.4%) comprised the second most common finding. A cause of hemostatic pathology among a minority of patients remained unidentified i.e. n=3 (9.4%).

Conclusion: Keeping in view of hemostatic defects, the study concludes that VWD is the commonest bleeding disorder among women presenting with menorrhagia. A routine screening of females with menorrhagia on their initial contact with the hospital can save years of suffering and lead to early management and probable recovery.

Keywords: Von Willebrand Disease, Hemostatic Dysfunction, Bleeding Disorders, Platelet Dysfunction, Menorrhagia & Bleeding Complaints among Women

INTRODUCTION

Women comprise the majority of patients presenting with bleeding disorders globally, with menorrhagia being the commonest presenting symptom. [1] Menorrhagia, by definition, is abnormally heavy or prolonged regular menstrual bleeding in contrast to metrorrhagia, which by definition, is irregular menstrual bleeding. The American Academy of Paediatrics and the American College of Obstetricians and Gynecologists released a consensus report in 2016, titled 'Menstruation in Girls and Adolescents: Using the Menstrual Cycle as a Vital Sign' stating that menstruation normally starts at the age of 11 to 14 years with the interval between cycles ranging from 21 to 45 days. [2]

The duration of normal menstrual loss was labelled as seven days or fewer with product use of no greater than three to six tampons or pads in a single day. As per the aforementioned criteria, the definition of menorrhagia can be stated as "heavy menstrual bleeding for more than seven days and leading to the discharge of no fewer than 80 mL of blood per cycle of menstruation. [3, 4]

In total, an estimated five to ten percent of females in their child bearing age present to doctors demanding a medical cure for menorrhagia. According to the WHO statistics, an approximate 18 females around the world suffer from this condition (menorrhagia) due to a vast array of gynaecologic, endocrine, organic, or other systemic reasons; however, the baseline etiology is only identified in no more than a half of the cases. [5]

Among the organic causes for menorrhagia are, genito-urinary infections, liver dysfunction, kidney failure and bleeding disorders. Chronic diseases of the liver impair clotting factor production and affect the metabolism of hormones regulatory such as oestrogen. Either of these is capable of resulting in heavy uterine bleeding. The endocrinologic cause that most commonly results in menorrhagia among adolescent females is anovulatory dysfunctional uterine bleeding owing to the immaturity of the hypothalamic–pituitary–ovarian axis. [6, 7] Etiologies falling in the anatomic domain comprise of endometrial polyps, uterine fibroids and hyperplasia of the uterine wall. [8] Factors that contribute to the high incidence of increased menstrual bleeding include, but are not limited to, Intra Uterine Device (IUD) placement, chemotherapy agent, steroid hormones, hypothalamic depressants, anticoagulants and phenytoin. [9]

An approximate one among every eight women with menorrhagia when screened for hemostatic disorders, are found to test positive for bleeding disorders including (but not limited to) Platelet Function Disorders, Von Willebrand Disease (VWD) or Rare Bleeding Disorders (such as deficiencies of coagulation factors such as fibrinogen, factor II, V, VII, V + VIII, X, XI and XIII). [10-12] Despite this, in most instances, cases of menorrhagia are seldom tested for hemostatic abnormalities and consequently, undiagnosed hemostatic abnormalities are prevalent among women suffering from menorrhagia, an approximate level of up to 10%. [13]

Bleeding disorders may be associated with generalized bleeding or may be the isolated presenting feature i.e. menorrhagia. Little is known, apart from the fact that Von Willebrand disease (VWD) is the commonest

underlying hemostatic disease, among women presenting with menorrhagia. Even then, the women that present to the healthcare setup with menorrhagia are seldom referred for hematologic evaluation, despite the fact that a number of tests are available to help in the evaluation of patients. Therefore, this study was conducted in an attempt to identify the burden of bleeding disorders (particularly Von Williebrand disease and other platelet function defects) among women presenting with menorrhagia at tertiary care hospital.

METHODOLOGY

This observational cross-sectional study was conducted up on 121 women, presented to the Dept. of Gyneacology & Pathology – Liaquat University Hospital, Hyderabad with complaints of menorrhagia. Participants were approached via non-probability, consecutive sampling while participants with history of Hemophilia (Type A & B), Idiopathic Thrombocytopenic Purpura. Aplastic Anemia and Leukemia were excluded from the study. After taking inform written consent and with the help of self-constructed structured questionnaire, participants were inquired about their biodata, and history of menstruation. Hematological investigations (complete blood count, peripheral film, PT, APTT and bleeding time) were conducted. The data obtained were analyzed using SPSS v. 21.0, while the duration of the study was from January 2019 to July 2019.

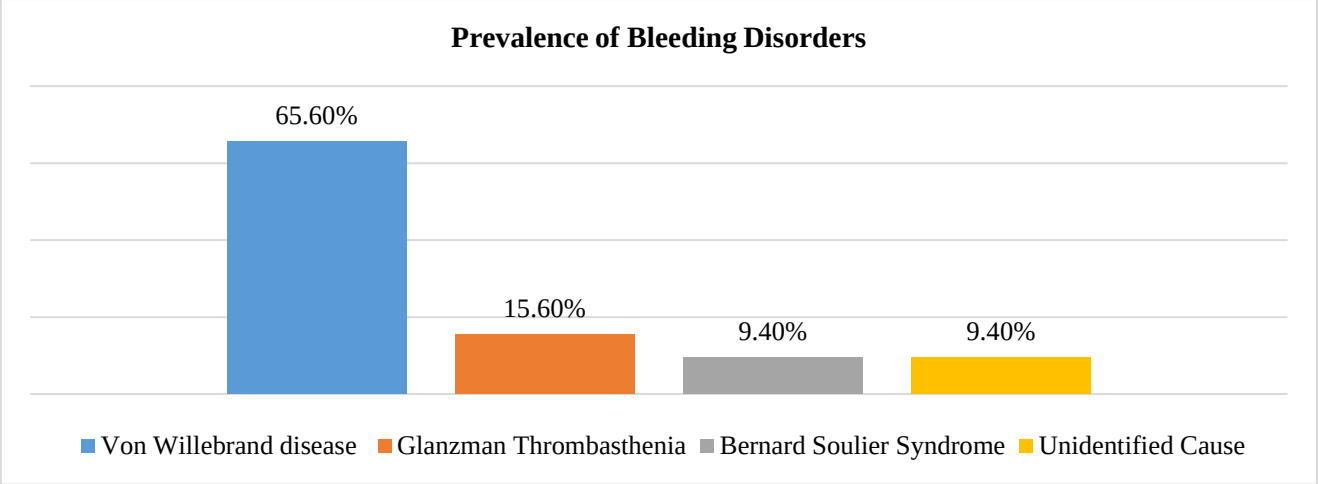
RESULTS

The mean age of the women was 28.13 years (±5.21 SD). Among the 121 women studied, 83 (68.6%) hailed from urban areas, while 38 (31.4%) belonged to rural areas. Most of the women in the sample were of child bearing age i.e. 108 (89.25%) while remaining women i.e. 13 (10.75%) were in post-menopausal phase. Worryingly, bleeding disorders were rather common, with a majority of the sample presenting with menorrhagia, however the cause was identified only in a little over a quarter of the patients i.e. 32 (26.5%) and among the majority of sample i.e. 89 (73.5%), the hematologic pathology was remain unidentified.

Among the underlying hemostatic pathologies, VWD was the most common i.e. 21 (65.6%), followed by other platelet dysfunctions (Glanzman Thrombasthenia (n=5, 15.6%) and Berard Soulier Syndrome i.e. n=3, 9.4%) comprised the second most common finding. A cause of hemostatic pathology among a minority of patients remained unidentified i.e. n=3 (9.4%).

Table No. 1 : Description of the Sample (n = 121)

Mean Age of Participants		22.13 Years (±5.21 SD)
Residence	Urban	83 (68.6%)
	Rural	38 (31.4%)
Menstrual Age Status	Child Bearing Age	108 (89.25%)
	Post-Menopausal Phase	13 (10.75%)
Causes of Menorrhagia	Hematologic	32 (26.5%)
	Undiagnosed	89 (73.5%)



DISCUSSION

There are two important roles for factor VIII (VWF) in haemostasis: to transport it and to connect it to the wounded blood vessel wall. Because platelet adhesion and blood clotting are both affected by VWF, bleeding can occur as a result of VWF defects. Type II von Willebrand disease has been characterised as a hereditary illness caused by a reduction in either the quality or amount of von Willebrand factor. In order for the blood to clot normally, VWD factor must be present. [14]

As stated above and substantiated by many of the research cited above, VWD is the commonest hereditary hemostatic abnormality with literature from the developed world claiming a prevalence of up to two percent and literature from the developing world and Pakistan in particular claiming to have found a prevalence of up to an approximate 8% [15] while our study reported a striking finding of presence of VWD in 17.4 % of total sample population.

People with VWD can present at any age because to the vast variation in severity of their symptoms, and some patients may have no evident bleeding history when they do present. A mild to moderate bleeding disorder associated with platelet dysfunction, including bruising,

epistaxis (gum bleeding), menorrhagia (menstrual bleeding), and prolonged bleeding after a haemostatic challenge (such as after circumcision, tooth extraction, or other surgical intervention), is common in type 1 and 2 VWD patients. [16, 17]

When reading these laboratory results, extreme caution should be taken, and no diagnosis should be made only on the basis of a single test; rather, these tests should be evaluated in combination with other screening and specific diagnostic tests. Because of the lack of precise testing, a considerable percentage of individuals with VWD are at risk of being misdiagnosed as having haemophilia based on the results of factor VIII levels in their blood. Type 2B VWD has also been reported to be misdiagnosed as Bernard Soulier syndrome when platelet aggregation is evaluated in isolation. VWD has also been reported to be misdiagnosed as immune-mediated thrombocytopenia when platelet aggregation is not considered. [18, 19]

Glanzmann thrombasthenia is another prevalent yet difficult condition to deal with (GT). It is a rare mucocutaneous hemostatic condition that affects the mucosa. It manifests itself as spontaneous bleeding complaints that occur at varied frequencies and severity levels. Petechiae, purpura, and easy bruising are frequently visible at delivery, allowing for a more accurate clinical diagnosis to be made early on. Our study also indicated that menorrhagia (in females of childbearing age) is a common presenting symptom observed to be present in Glanzmann thrombasthenia, which is consistent with previous findings. [20, 21]

Known as Bernard Soulier Syndrome, it is a hereditary platelet function abnormality that manifests as mucocutaneous haemorrhage, thrombocytopenia, and large platelets in the absence of platelet aggregation in response to Ristocetine treatment. Bernard and Soulier were the first to define BSS as having an autosomal-recessive inheritance pattern in 1948. The prevalence of Bernard Soulier Syndrome (BSS) has been estimated to be roughly one in one million, and our study includes three examples of the condition. [22]

This study is among the only few attempts made at identifying the hemostatic profile amongst women presenting with menorrhagia. The statistics yielded are largely novel and may help serve as the basis for future research. Since women of all ages, are enrolled into the study without bias, an interesting display of different bleeding disorders across all ages can be seen, which no other research (in our part of the world) offers.

CONCLUSION

Keeping in view of hemostatic defects, the study concludes that VWD is the commonest bleeding disorder among women presenting with menorrhagia. A routine screening of females with menorrhagia on their initial contact with the hospital can save years of suffering and lead to early management and probable recovery.

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