FREQUENCY OF VON WILLEBRAND DISEASE IN PATIENTS OF HEAVY MENSTRUAL BLEEDING

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ABSTRACT

Objective: To determine the frequency of Von Willebrand disease (vWD) in patients of heavy menstrual bleeding (HMB).

Study Design: Hospital based cross sectional study.

Place and Duration of Study: Study was conducted at the Gynecology and Obstetrics department, Military Hospital, Rawalpindi in collaboration with Haematology Department of Armed Forces Institute of Pathology (AFIP) Rawalpindi, from Jul to Dec 2015.

Material and Methods: Women presenting with HMB were enrolled in the study after informed consent. HMB was defined as cyclical bleeding at normal intervals but patient is using more than 5 pads per day or increase in duration 8/28 or more for at least last 06 months. Venous blood samples were taken and screened for the hemoglobin level (Hb), platelet count, prothrombin time (PT), activated partial thromboplastin time (aPTT) and Von Willebrand antigen (vWF:Ag) in addition to bleeding time (BT) at the Armed Forces Institute of Pathology (AFIP). The demographic details (age, age at menarche), clinical features (menstrual history, quantity of bleeding) and laboratory findings were recorded on the study proforma.

Results: A total of 200 patients were enrolled in this study with mean age of 32.3 ± 8.5 years. Mean flow of menstrual blood was 9.8 ± 2.5 pads / day. Mean Hb% was 8.1 ± 1.4 g/dl. Twenty nine (14.5%) patients were having low level of vWF:Ag.

Conclusion: There is high frequency of von Willebrand disease among females presenting with heavy menstrual bleeding in our set up. Therefore all patients with heavy menstrual bleeding except those with obvious causes like multiple fibroid should be screened for von Willebrand disease.

Keywords: Ag Assay, Heavy menstrual bleeding, Von Willebrand disease, Von Willebrand factor.

INTRODUCTION

The prevalence of heavy menstrual bleeding (HMB) in women of reproductive age group is the commonest presenting complaint in gynecology outpatients and accounts to about 12% of the total referrals to the obstetrics and gynecology department[1,2]. HMB can cause complications such as anemia, fatigue and shortness of breath which significantly lowers the social functioning and quality of life[2-4]. Genital tract abnormalities and endocrine disturbances can lead to HMB but in 50% of the cases the cause remains unknown[3]. Several studies had identified Von Willebrand Disease (vWD), as an important cause of HMB in this cohort of patients. The diagnosis of vWD is on the basis of deranged activated partial thromboplastin time (aPTT), prolonged bleeding time (BT) and decreased factor VIII activity in presence of normal prothrombin time (PT) and normal platelet count but impaired platelet function defects. Nowaday's vWD can be diagnosed by von Willebrand Antigen assay (vWD:Ag). Prompt diagnosis of vWD in patients of HMB can greatly influence the outcome in terms of management and improved quality of life. vWD disease is a hematological disorder affecting up to 1% to 1.3% of the world's population[5-7]. It has three main types namely type 1 (partial quantitative deficiency); type 2 (qualitative deficiency); and

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type 3 (total deficiency)[6]. The disease equally affects both genders due to autosomal mode of inheritance[8]. vWD type 1 is the most common and may remain asymptomatic till the patient undergoes hematological stress in the form of menstrual bleeding, child birth and other stress of reproductive age. The frequency of vWD in patients of HMB varies from 10% to 24%[1]. However studies on the frequency of vWD in Pakistani women presenting with HMB are very limited. Therefore we aimed to determine the frequency vWD in patients of HMB.

MATERIAL AND METHODS

This cross sectional study was conducted at the Gynecology and Obstetrics Department, Military Hospital, Rawalpindi in collaboration with Haematology Department of Armed Forces Institute of Pathology (AFIP) Rawalpindi, from July 2015 to December 2015. The sample was collected using non probability consecutive sampling technique and sample size was calculated by using the World Health Organization (WHO) sample size calculator at Confidence 95%, anticipated population 24%, precision 6% and sample size of 200 was calculated[1]. Women presenting with heavy menstrual bleeding were enrolled in this study aftertalking informed consent. Heavy menstrual bleeding was defined as cyclical bleeding at normal intervals but patient is using more than 5 pads per day or have increase in duration of 8/28 of cycle or more for at least last six months. Patients with fibroid uterus, genital tract polyp, hyperplasia, cancers, genital tract infections and those on anticoagulant therapy were excluded

Table-I: Demographic detail of the patients (n=200).

Variables	Mean ± SD
Age (In Years)	32.35 ± 8.505
Blood flow (In Days)	11.80 ± 3.783
Blood flow (no of pads per day)	9.89 ± 2.527
Age at menarche (In Years)	12.12 ± 1.277
Hemoglobin Level (mg/dl)	8.135 ± 1.422
Parity	
<2	63
2-5	76
>5	5

Table-II: Summary of different laboratory test of all the patients in the study (n=200).

Summary of other laboratory tests		
Test	**Number of patients**	**Percentage of patients**
Factor VIII Levels		
Deranged	27	13.5%
Normal	173	86.5%
PT		
Deranged	0	0%
Normal	200	100%
aPTT		
Deranged	26	13%
Normal	174	87%
BT		
Deranged	23	11.5%
Normal	177	88.5%
Platelet count		
Decreased	5	2.5%
Normal	195	97.5%

from the study. Venous blood samples were taken and screened for the hemoglobin level (Hb), platelet count, PT, aPTT and von Willebrand Factor Antigen (vWF:Ag) in addition to BT at the AFIP. The demographic details (age, age at menarche), clinical features (menstrual history, quantity of bleeding) and laboratory findings were recorded on the study proforma.The data were analyzed by using Statistical Package for Social Sciences (SPSS) version 21. Frequency and percentages were computed for categorical variables like vWD whereas mean and standard deviation was estimated for quantitative variables (age, age at menarche, Hb level, flow and duration of menstrual cycle).

RESULTS

A total of 200 patients were enrolled in this study with mean age of 32.3 ± 8.5 years. Mean flow of menstrual blood was 9.8 ± 2.5 pads / day. Demographic details including age, age at menarche, parity and cycle are shown in table–I. The hematological parameters are shown in tableII. Twenty nine (14.5%) patients were having low level of vWF:Ag – table-III.

DISCUSSION

HMB is a common presenting complaint in females of reproductive age group with bleeding disorders[1]. The common causes of HMB are intrauterine devices (IUDs), infections, thyroid disorders and anovulatory cycles. In cases of HMB where any such cause could not be found vWD should be suspected. It is a bleeding disorder in which deficiency of von Willebrand factor results in impaired primary hemostasis due to defective adhesion of platelets and destabilization of factor VIII protein. The frequency is similar in both genders but it becomes apparent in females due to hematological stress of menstruation and childbirth.

In a similar studyfrom Karachi, Borhany et al, reported 10.3% patients of HMB had different inherited bleeding disorders out of which 21.3% had vWD[9]. In another study Saxena et al concluded that 11.9% of the Indian females presenting with heavy menstrual bleeding were found to be positive for vWD. When compared to this study the frequency is slightly higher in our study probably due to relatively small sample size[10]. Chen and colleagues studied the prevalence of vWD in women with iron deficiency anemia and menorrhagia and found that 16.1% patients had vWD, which is in agreement with ourstudy[11]. Vo et al reported 9% women with bleeding disorders having vWD[12]. The possible reasons of variation in frequencies of vWD among these reported studies could be the size of study population, social practices, especially close cousin marriages over many generations, method employed to diagnose and timings of sampling i.e. pre or post hormonal treatment.

Heavy menstrual bleeding causes significant impairment in social functioning and quality of life. Management aims at reduction of symptoms and improving quality of life that can be achieved by using cryo-precipitates and hysterectomy. As vWD has high frequency in patients of HMB we recommend that all patients of HMB or patients having history of bleeding disorders in their families should be screened and evaluated for this bleeding disorder.

Table-III: Distribution of vWF:Ag (n=200).

Distribution of cases by vWF:Ag		
vWF:Ag	**Number**	**Percentage**
Positive < than 30%	29	14.5%
Negative > than 30%	171	85.5%
Total	200	100.0%

CONCLUSION

There is a high frequency of vWD in Pakistani females presenting with heavy

menstrual bleeding. Therefore all patients with heavy menstrual bleeding except those with obvious causes like multiple fibroid should be screened for vWD.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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