Screening for *von Willebrand* disease in women with puberty menorrhagia

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OBJECTIVES

Puberty menorrhagia often remains undiagnosed and perplexing owing to lack of awareness, lack of diagnostic facilities and the expensive diagnostic work-up. The prevalence of autosomally inherited *von Willebrand disease* (vWD) in adolescent girls with menorrhagia is reported to be10%. Early detection also mitigates the negative impact heavy menstrual bleeding has on an adolescent's education as well as reduced lifestyle and quality of list parameters. Objective of this study was:

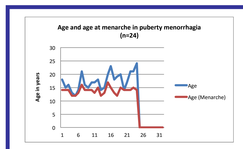
- To identify patients with puberty menorrhagia
- To identify the prevalence of vWD in puberty menorrhagia

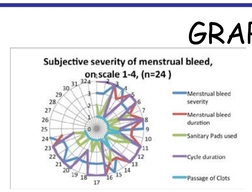
METHODS

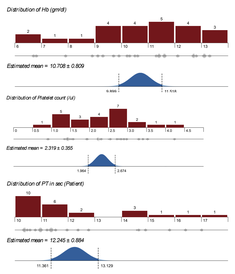
After due ethical approval from IEC, this study was conducted in the Hemophilia Centre in MAMC and LNH, New Delhi, with patients from Departments of Obs-Gynae and Medicine. Our institution received patients from whole of Northern India. Twenty-four consecutive young women diagnosed with puberty menorrhagia were investigated for haemostasis and VWD, along with another 24 age matched controls without puberty menorrhagia.

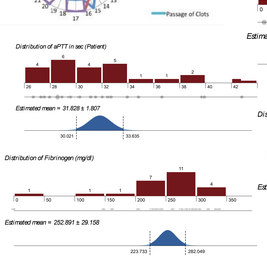
Besides the clinical details in a pre-structured performa, blood samples from the subjects were analyzed for complete blood count (CBC), Prothrombin time (PT), Activated partial thromboplastin time (aPTT), Fibrinogen level, D-dimers and peripheral blood smear using Sysmex KX-21 cell counter and an automated Coagulometer ACL Advance. Descriptive statistical analysis was carried out on the data for clinical possibility of a bleeding disorder and of the vWD.

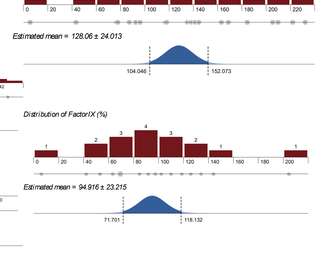
GRAPHS AND TABLES

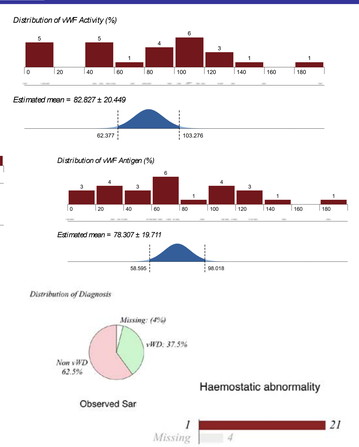












RESULTS

Of the 24 subjects with puberty mennorhagia, 15 (62%) were Hindu and 9 (38%) were Muslim. Mean age was 17.42±3.2 years, mean BMI 18.43±3.0 (range 11.7-26.14), systolic blood pressure 109.8±9.7 (range 86-124) mm Hg, diastolic blood pressure 73.1±7.5 (range 56-86) mm Hg. Eleven (46%) were underweight.
Median age at menarche was 13.88±1.3 years (range 12-17). Two-third had menstrual bleed for more than 10days, 29.2% for 7-10 days and 4.2% for 4-7 days. One-sixth reported using more than 6 pads per day aith another 37.5% using 4-6 pads per day. Continuous bleeding of more than 10 days was reported in 16 cases (66.7%) and clot passage was reported by 91.7%(22). The bleeding affected Quality of Life in 62.5%(15).

There was a history of nose bleed 8.3%(2), gum bleed 8.3%(2), prolonged bleeding from minor cuts 12.5%(3), bleeding from upper and lower gastro intestinal tract 8.3% (2) and easy bruising 4.2%(1).

von Willebrand Disease was suspected in 9 (37.5%) cases, with abnormal levels of *von Willebrand Factor (*vWF) antigen and vWF activity in 22.5% and 19.6% respectively. In 7.1% subjects, an isolated increase of bleeding time was observed.
When compared with control group, the cases with puberty menorrhagia showed significant difference with reduced APTT (95% CI -9.81946, -1.00554, p- 0.002) and reduced fibrinogen levels (95% CI, -51.4643, 49.6977, p- 0.012), though there was no statistical difference between the sub-groups of subjects with and without vWF disorder (P = .17). Overall 12 cases (excluding vWF cases) had some underlying haemostatic disorder on clinical history, examination, or laboratory investigations.

CONCLUSIONS

- *von Willebrand Disease* was suspected in 37.5% od subjects with puberty menorrhagia and hence needs to be included in the work-up of puberty menorrhagia in developing countries
- Another 50% had some clue on clinical history, examination or laboratory investigations for a possible haemostatic abnormality in puberty menorrhagia
- Identifying these treatable disorders in developing countries will bring down morbidity and improve Quality of Life in young women during their productive years

Poster P-T-201, submission ID #809 WFH CONGRESS 2016, ORLANDO, USA

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