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May 16th, 11:30 AM - 1:30 PM

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Lauren Amos MD

Children's Mercy Hospital

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Heavy Menstrual Bleeding in Adolescent Females with Platelet Function Disorders

Lauren E. Amos, MD¹, Shannon L. Carpenter, MD, MS¹

¹Division of Hematology-Oncology-BMT, Children's Mercy Hospital, Kansas City, Missouri

Background: Heavy menstrual bleeding (HMB) occurs frequently in adolescent females with bleeding disorders. As diagnostic techniques for platelet function disorders (PFD) improve, these disorders are now recognized to commonly cause HMB. Limited data exists about the prevalence of PFD in adolescents with HMB. Even less is reported on management and treatment outcomes in patients with HMB and PFD.

Objective: This study's objective was to evaluate the prevalence, clinical features, management, and outcomes of HMB in adolescent females with platelet function disorders

Methods: A retrospective, single center chart review was performed of female patients aged 9-21 years with HMB and a diagnosed PFD treated at a tertiary care pediatric hospital from January 1, 2000 until December 31, 2017. Heavy menstrual bleeding was defined as menses lasting longer than 7 days, use of 8 or more pads or tampons per day during menstrual cycle, pictorial bleeding assessment chart score greater than 100, or symptomatic anemia. Patients were identified from our Hemophilia Treatment Center (HTC) registry, review of patients seen at a comprehensive clinic staffed by pediatric hematologists and gynecologists for adolescent females with HMB and bleeding disorders, and by an Electronic Medical Record (EMR) query of admission and discharge diagnoses of HMB and anemia. Data obtained included demographics, clinical features, laboratory results, treatment modalities, and outcomes.

Results: 41 patients with PFD who achieved menarche were identified. 36 of these (88%) met criteria for HMB. The median age at presentation of HMB was 14 years (range 10-18). 35/36 patients had documented abnormal platelet aggregometry (PA) and the majority of patients (27/35) had at least 2 sets of abnormal PA. All patients were diagnosed with non-specific PFD. 15 of the 36 patients (41%) required hospitalization and packed red blood cell transfusion for severe anemia at time of presentation. Mean and median hemoglobin at presentation of HMB respectively were 9.5 gm/dL and 11.3 gm/dL (range 3.1-14.8) and 21 patients (58%) were anemic at presentation. 26 patients had ferritin obtained at presentation and 18 (69%) were iron deficient using our lab's reference range of ferritin less than 13 ng/dL. Half of the patients (18/36, 50%) failed first-line treatment. Successful first-line treatment included hormonal therapy alone (4 patients), hemostatic therapy alone with tranexamic acid (4 patients), hormonal plus hemostatic therapy (7 patients), and intra-uterine device plus hemostatic therapy (1 patient). The mean duration of HMB until report of resolution was 8.2 months (median 5 months; range 1-24). 8% (3/33) of patients reported continued HMB at last documented clinic visit.

Conclusions: HMB occurred in the majority of adolescent female patients with PFD. These patients were frequently anemic and iron deficient. Severe and life-threatening anemia requiring hospitalization and packed red blood cell transfusion was common. First line treatment of HMB was not uniform and failed

in 50% of the patients. Prospective studies are needed to standardize treatment of HMB in adolescents with PFD.