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COMMENTARY

Heavy menstrual bleeding in adolescents: a primary issue in primary care

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A teenage girl has heavy menstrual bleeding (HMB), a common yet underreported and underdiagnosed condition [1]. Despite soaking through products in less than an hour and bleeding for 10 days, she doesn't recognize this as abnormal because she never learned what normal menstruation should be. Menstruation has been stigmatized across cultures for centuries [2]. Forty-one percent of parents of girls never discuss menstruation with their children [3]. In Florida, a "Don't Say Period" law recently took effect, further limiting opportunities for menstrual education. Given the stigma and lack of education, it isn't surprising that only 4 of 10 women with HMB seek care for these symptoms [4]. Although the girl's mother is aware of the bleeding, she doesn't recognize it as abnormal as her menses were similar, as were her own mother's. Although the teen sees her primary care physician regularly, her doctor is overburdened and has not collected the many details necessary to identify HMB. It's been found that <10% of family practice and pediatric providers document a menstrual history [5]. Underrecognition, underreporting, and underdiagnosis of HMB not only lead to ongoing untreated symptoms but also may miss underlying bleeding disorders that require treatment in other settings. Little is known about the ideal diagnostic workup and management of HMB in primary care settings or what is currently being done.

In the recent article in *Research and Practice in Thrombosis and Haemostasis*, "Heavy Menstrual Bleeding in Adolescents: Incidence, Diagnostics and Management Practices in Primary Care," the authors seek to evaluate the incidence of HMB seen by general practitioners and the subsequent diagnostic and management practices [6]. The authors used a multicenter database within a municipality of the Netherlands to perform a retrospective cohort study of women 10 to 21 years of age between January 2010 and December 2020. The Dutch National Guideline "Vaginal Blood Loss" was referenced for context to help benchmark their findings. Patients with HMB were identified through a diagnostic coding system. To be included, patients had to visit their general practitioner, receive the diagnostic code for menorrhagia and have follow-up for at least 6 months. There were no exclusion criteria. Through coding queries, information regarding pre-evaluation variables including diagnosis of anemia, or a bleeding disorder, and medications was collected. Once HMB was confirmed, investigators collected the number of follow-ups, referrals made, new diagnoses (anemia or bleeding disorders), laboratory and imaging studies performed, medication use, and presence of intrauterine devices.

The incidence rate of HMB in the study was 7.91 per 1000-person years [6], significantly lower than that reported in the literature. This is plausible considering patients like the aforementioned teen who may not seek care for their bleeding symptoms. Additionally, the author's findings suggest that if the teen had presented to care with HMB, she likely would not have undergone diagnostic testing. Among 1879 new diagnoses of HMB no diagnostic studies were performed in the majority (67%) of individuals. Of those who did have laboratory studies performed, hemoglobin (590/1879, 31.4%) and mean corpuscular volume (534/1879, 28.4%) were the most common. Coagulation screening with prothrombin time (PT) and activated partial thromboplastin time (aPTT), and iron screening with ferritin were tested in 1.3%, 1.4%, and 10% of patients, respectively.

It is notable that <2% of those diagnosed with HMB in the current study had hemostatic testing as it is estimated that up to 43% of these patients will be identified to have an underlying bleeding disorder [7,8]. The Dutch National Guideline recommends the pictorial blood assessment charts as a bleeding assessment tool to help determine if subjects need further evaluation; however, information on the use of this instrument could not be collected through the coding system. Although this recommendation may strive to avoid unnecessary

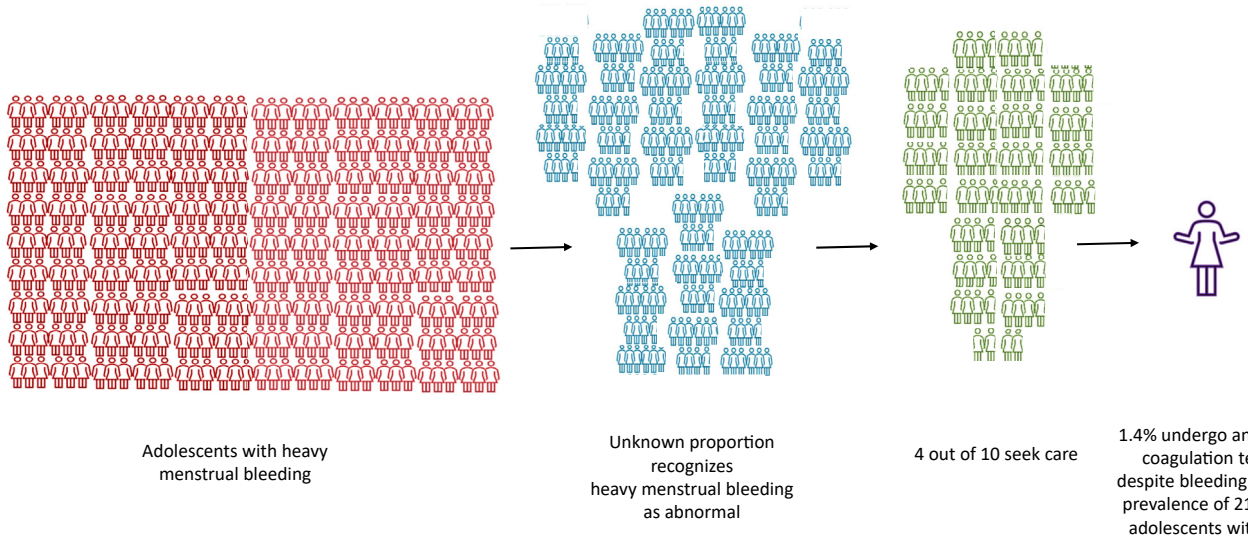

FIGURE Diagnostic journey for adolescents with heavy menstrual bleeding.

testing, the pictorial blood assessment chart is best done prospectively, which can be challenging if patients are lost to follow-up and has been found to lack sufficient standardization for widespread use in primary care [9]. The authors were not able to collect data on why specific patients had testing or why the vast majority did not.

The recommendation for the use of PT, aPTT, and platelet count to screen for an underlying bleeding disorder in the study must also be reconsidered. von Willebrand Disease (VWD) and platelet function disorders are the most frequent bleeding disorders associated with HMB [1] and are likely to be missed with these recommendations. The aPTT can be prolonged in patients with VWD, but a normal aPTT does not rule out the diagnosis, and current recommendations for diagnosis include more specific von Willebrand assays [10]. As VWD is the most common inherited bleeding disorder in women, and the most common to be associated with HMB, consideration of this diagnosis is imperative in these patients. It is also the most likely diagnosis in this teen with multiple generations of affected family members. The underreporting, underrecognition, and lack of work-up for HMB likely contribute to inequity in VWD diagnosis. It has been reported that 50% of females with VWD are not diagnosed by the time they are 12 years old, compared to males in whom 76% are diagnosed by the age of 10 years old [2]. Platelet function defects are also likely to be missed using these assays as platelet number is most commonly normal in platelet function disorders and specialized platelet testing is required for diagnosis. Other bleeding disorders are also unlikely to be diagnosed under current recommendations. The aPTT can be normal in females with mild hemophilia where delayed and missed diagnoses are frequent [11]. Factor level activity has not been shown to correlate strongly with bleeding phenotype and affected females with levels in the normal range can exhibit HMB [2,12]. The inclusion of expanded hemostatic testing is critical for those with HMB and concern for an underlying bleeding disorder.

The most performed laboratory assays were hemoglobin and mean corpuscular volume. Although hemoglobin is important to identify adolescents with iron deficiency anemia, the prevalence of iron deficiency without anemia is much higher. While the HMB guidelines from the current study do not include assessment of iron status, evaluating ferritin levels is recommended in this population as the vast majority of iron deficiency is missed with hemoglobin assessment alone [13]. Iron deficiency without anemia can be associated with fatigue, decreased athletic performance, and reduced quality of life [14]. Underrecognition and underreporting of HMB likely lead to many adolescents with iron deficiency not being diagnosed and appropriately treated. Recent data from the United States found that almost 40% of adolescents between 12 and 21 years of age are iron deficient, and iron deficiency was associated with any menstruation, highlighting the high prevalence in this population [13]. Laboratory recommendations in those with HMB should be expanded to include dedicated iron assessment.

Management strategies included the use of hormonal treatment, copper intrauterine devices, analgesics, tranexamic acid, iron supplements, and combined treatments. Over a third of patients did not receive treatment. No data were collected on efficacy. Data were also collected on follow-ups and referral patterns. Referral rates were higher with increased follow-up visits with 1.5%, 6.7%, and 12.1% of subjects being referred after 1, 2, or ≥3 follow-up consultations. It is striking that if the aforementioned teen required many visits for this same issue, they still would be unlikely to receive any type of referral. Referrals were most common to gynecology with no report of referral to hematology. This is concerning as gynecologists may be comfortable with management of HMB, however, may not investigate for underlying hematologic issues.

The authors note the low adherence to the existing national guidelines, in addition to rightfully highlighting the limitations of current recommendations. Given low adherence in a country with a

national health system and dedicated guidelines, it is likely that even less is being done in areas of the world without recommendations. We all can agree on the vital importance of the general practitioner as a first line to identify HMB in the adolescent patients, but further guidance is needed to ensure the optimal care of these patients. Patients like this teen are at risk of falling through the cracks at many points along their diagnostic journey (Figure). Broader education is needed to ensure that patients and providers alike can identify abnormal bleeding and encourage patients to seek care for these symptoms. Dedicated guidelines, rooted in known prevalence of underlying etiologies and knowledge of appropriate laboratory testing, for optimal workup and management within the primary care setting, including appropriate referrals to specialists, are needed. Current guidelines, where in place, should be reconsidered based on the known epidemiology of both bleeding disorders and iron deficiency with and without anemia.

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J.S. drafted the manuscript and A.C.W. performed critical revision of the manuscript.

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