Stemming the Crimson Tide: Heavy Menstrual Bleeding in Adolescents
Maya Kumar, MD, FAAP, FRCPC
Disclosures

- I have no disclosures related to this topic
Differential Diagnosis

1. Anovulation from Immature HPO Axis (Dx of Exclusion)
2. **Bleeding Disorder**
3. Endocrinopathy
4. Infection
5. Pregnancy-related
6. Medications (esp birth control)
7. Trauma
8. Foreign body
9. Structural (very uncommon)
10. Malignancy (very uncommon)
Pertinent History

- Severity of bleeding (#/frequency of pads/tampons, “doubling up”, soaking through clothes/bedsheets, “gushing”, large clots)
- Symptoms of anemia
- Stigmata of bleeding disorder
- PMHx: anemia, hospitalization, transfusion
- FHx of anemia, known bleeding disorders, heavy periods, other bleeding, bleeding with procedures/dental work/circumcision, hysterectomy for bleeding, blood transfusion
Pertinent History

- ROS
  - Prolactin stuff
  - Thyroid stuff
  - Androgen stuff
- Sexual history
  - Unprotected sex
  - Last normal period
  - Discharge/dysuria
  - Dyspareunia
  - Trauma
Physical Exam

- Vitals (including orthostatic vitals)
- Derm: pallor, petechiae, purpura, bruising
- Abdominal exam: masses, HSM, distension
- Pelvic exam: NOT ROUTINELY REQUIRED, but consider if:
  - Sexually active (PID)
  - Concern for trauma or foreign body
Labs

- Obtain BEFORE transfusion and BEFORE initiation of hormone therapy
- Anemia Stuff
  - CBC (Hgb)
  - Ferritin
  - Consider Type/Cross
- Urine HCG
- Hormone Stuff
  - TSH
  - Prolactin
  - Consider DHEAS/free+total testosterone/17-hydroxyprogesterone
Labs

- Bleeding Disorder Stuff
  - Platelet count (in CBC)
  - aPTT/INR
  - Von Willebrand Panel (Antigen/Multimeric Analysis, Ristocetin Cofactor, Factor VIII activity)
  - Fibrinogen
  - PFA-100/platelet function test (screen) or platelet aggregation studies ($$$)

- Infection Stuff
  - Chlamydia/Gonorrhea (NOT DIAGNOSTIC of PID)
  - Consider ESR/CRP
A Note on Labs

- Beware: von Willebrand Factor, Ristocetin Cofactor, and Factor VIII can be falsely reassuring at presentation
  - Acute phase reactants
  - Rise in the presence of supplemental estrogen
- Patients with +FHx and borderline values of vWF Ag and ristocetin cofactor (50-100% activity): repeat in a few weeks when heavy bleeding has stopped AND off estrogen for at least 1 week
- If >100% at baseline during bleeding, NPV is 100% (Brown et al, 2019)
Imaging

- Pelvic U/S is NOT needed routinely
- Consider only if not responding to management
ACOG Guidelines (2019)

Figure 2. Approaches to Testing and Management. (Adapted from Elly JX, Kennedy CM, Clark EC, Bowdler NC. Abnormal uterine bleeding: a management algorithm. J Am Board Fam Med. 2008;21:930–942.) Abbreviations: bol, bolus; CBC, complete blood cell count; COC, combined oral contraceptive; DHEAS, dehydroepiandrosterone sulfate; DVT, deep vein thrombosis; EE, ethinyl estradiol; HCG, human chorionic gonadotropin; Hct, hematocrit; Hgb, hemoglobin; HMR, heavy menstrual bleeding; INR, international normalized ratio; IV, intravenous; NSAIDs, nonsteroidal anti-inflammatory drugs; POC, point-of-care; PE, pulmonary embolism; PO, orally; prn, as needed; PT, prothrombin time; PTT, partial thromboplastin time; T & C, type and cross; vWF, von Willebrand factor.)
Management

**Maya Kumar’s COC Recipe:**
- 1 OCP QID x 4 days, then
- 1 OCP TID x 3 days, then
- 1 OCP BID x 2 weeks, then
- 1 OCP daily x 3 months (Skip placebos!)

**Maya Kumar’s Progesterone Recipe:**
- Medroxyprogesterone
  - 20 mg TID x 1 week, then
  - 10 mg TID x 1 week, then
  - 10 mg BID x 1 week, then
  - 10 mg daily x 1 week, then
  - Stop.
Inpatient Management

Tranexamic Acid: 10 mg/kg IV (600 mg max) TID or 1-1.5 g PO TID x 5 days

- If tolerating PO, begin COC taper
- If unable to tolerate PO, Premarin 25 mg IV every 4 hours; when bleeding slows or stops, then start COC tapers
- Begin antiemetic

**ESTROGEN CONTRAINDICATIONS?**

- NO
  - ESTROGEN THERAPY
    - PO medroxyprogesterone high dose (60-80 mg) bid until bleeding stops then begin progestin taper
  - BLOODYING
    - STOPS
    - CONTINUES
    - DISCHARGE CRITERIA
      - When Hgb and bleeding stable
      - Tolerating PO therapy
      - MUST schedule follow-up therapy within 7 days.
    - ADD antifibrinolytic
    - Consult hematology
    - Consider balloon tamponade

- YES
Subsequent Management

MAINTENANCE THERAPY
• Continuous (active pills only) until Hgb is normalized
• Re-evaluate hormonal options for management of heavy bleeding
• NSAIDs
• Oral iron until iron stores restored by normal ferritin
• Stool softeners prn
References


- ACOG Committee Opinion #785. Screening and Management of Bleeding Disorders in Adolescents With Heavy Menstrual Bleeding. September 2019