APH Guideline for Management of Adolescents with Acute Heavy Menstrual Bleeding (HMB)

Differential diagnosis

- Ovulatory dysfunction
  - Most common cause of prolonged abnormal bleeding in adolescents
  - Usually due to immature hypothalamic pituitary ovarian axis
  - Other causes of ovulatory dysfunction are PCOS, hypothalamic causes (significant stressors), thyroid disease, prolactinemia
- Coagulopathy or bleeding disorders
- Chlamydia/cervicitis/PID
- Endometriosis
- Hormonal contraceptive
- Trauma
- Pregnancy

Exam – key elements

- Vital signs with orthostatic pulse and blood pressure
- Tanner stage, height, weight, BMI
- Look for acanthosis nigricans, acne and hirsutism (signs of PCOS)
- Look for bruising or other bleeding
- DO NOT perform internal pelvic exam, unless internal vaginal trauma/laceration is suspected by the history

History - key elements

- Full menstrual history (age of menarche, how frequent her menses are, how long, how heavy, how many pads per day, for how many days has the current bleeding been present)
  - HMB = 1 pad/tampon soaked per hour, menses >7 days, blood loss > 80mL (1/2 cup), passage of clots >1 inch
- Anemia or orthostatic symptoms
- Bleeding hx: epistaxis, gum bleeding, easy bruising, excessive bleeding with lacerations or dental procedures, family history of bleeding symptoms and bleeding disorders
- Prior use of hormonal contraceptives
- PMH: Assess for contraindications to estrogen (see last page of guideline)
- Psychosocial: HEEADSSS interview (confidential)

Labs and imaging

- Rule out pregnancy
- CBC, TSH, reticulocyte count, iron studies
- If PCOS is suspected check: Hgb A1C, free/total testosterone, DHEAS, prolactin level (preferably check hormonal levels early in hormonal therapy course)
- If sexually active, urine GC/chlamydia
- Transabdominal pelvic ultrasound
- Blood type and crossmatch if Hbg <7
- Bleeding workup: PT, aPTT, fibrinogen, PFA-100, von Willebrand panel (vWF activity, antigen, Ristocetin Cofactor, F VIII activity). Workup will likely need to be repeated outside of the acute bleeding phase even when normal

Indications for hospitalization

- Hemodynamic instability or symptomatic anemia (orthostasis, etc)
- Hgb ≤ 7 g/dl with active moderate/heavy bleeding
- Need for IV conjugated estrogen (unable to take oral medications or continued heavy bleeding after 24 hours of estrogen-progestin combination therapy)
- Concerns regarding treatment compliance

Outpatient management

- Recommended hormone taper: LoOvral (30mcg ethinyl estradiol and 0.3mg norgestrel; generic name Cryselle).
  - If light/moderate bleeding and Hgb ≥ 11: start 1 pill BID until bleeding stops, then transition to daily.
  - If moderate bleeding and Hgb between 8 and 10: start taper – LoOvral 10-20mg (Cryselle) 1 pill q6-8hr until bleeding stops, then 1 pill q12hrs for 48 hours, then 1 pill qday. Provide anti-emetic (Zofran or Phenergan). Skip placebos.
  - Arrange Adolescent Gyn and Heme follow-up.
- Contraindications to estrogen (see list of contraindications below): use progesterone-only.
  - If light/moderate bleeding & Hgb≥ 11: Ortho-Micronor (Norethindrone 0.35mg) 1 pill BID until bleeding stops
    - Alternatives to Micronor: Drospirenone 4mg (Slynd) *preferred if contraception also needed
    - Alternative to Micronor: Depoprovera also an option if compliance is a concern
  - If light/moderate bleeding and Hgb 8-10: Norethindrone acetate 20mg q8hrs until bleeding stops, then 10mg q8 hr x48 hours, then 10mg q12hrs for 48hours, then 10mg qday.
  - Alternative: Medroxyprogesterone acetate (Provera 10mg) 1 pill q4-6hr until bleeding stops, then q8hrs x 48 hrs, then 1 pill q12hrs x 48 hrs, then 1 pill qday.
- Arrange GYN and/ or Adolescent referral within 1-2 weeks. Routine Hematology referral.
- Prescribe ferrous gluconate 325mg bid to replete iron stores.

Inpatient management

Treatment of bleeding

- Oral hormone taper: LoOvral (30mcg ethinyl estradiol and 0.3mg norgestrel; generic name Cryselle; on APH formulary), 1 pill q6hrs until bleeding stops (usually stops w/in 24-36 hrs) then q8hrs x 48 hrs, then q12hrs for 48 hrs, then 1 pill qday. Skip placebos. Provide anti-emetic (Zofran or Phenergan).
- Unable to tolerate PO: IV Premarin 25mg q4hrs until bleeding stops (usually within 24-36 hrs), then transition to LoOvral (Cryselle) taper as follows: 1 pill q8hrs x 48 hrs, then q12hrs x 48 hrs, then 1 pill qday. Skip placebos.
- Contraindication to estrogen (see list of contraindications below): use progesterone-only Medroxyprogesterone acetate (Provera 10mg). Start with 60-80mg BID until bleeding stops, then 20mg q8hr x48hr, 10mg q8hr x 48 hrs, then 10mg q12hrs x 48 hrs, then 10mg qday. Skip placebos. Provide anti-emetic (Zofran or Phenergan).
- Parents/ Guardians not comfortable with hormone therapy: tranexamic acid PO 1300mg x5 days
- If bleeding has not improved after 24 hrs: If bleeding has not improved after 24 hrs on intensive hormone therapy, recommend Gyn and/or Heme consult and consider adding Lysteda (tranexamic acid) PO 1300mg TID x 5 days. If giving Lysteda, provide anti-emetic (Zofran or Phenergen).
- Discharge criteria: clinically stable and bleeding has stopped on the pill (usually within 24-26 hours). Gyn outpatient follow-up within 1-2 weeks.
- Contact Stephanie Sharon (info below) to arrange Adolescent Gyn and Heme follow-up.

Iron therapy

- Recommend IV iron in-hospital to avoid compliance issues.
- Can use Infed (Iron Dextran) using the "Iron Dextran Total Dose Infusion Protocol"
- Test dose should be administered prior to starting iron dextran therapy; observe for at least 1 hour after test dose
  For >20kg patients: 25 mg test dose (0.5mL)
  For 10-20kg patients: 15mg test dose (0.3mL)
  For <10kg: 10mg test dose (0.2mL)
- Total iron dextran dose, use target hemoglobin of 13-14, round dose to nearest 50mg
  Calculation: Total dose Iron Dextran Total Dose Infusion (mg) = [[0.0442 (target Hgb - observed Hgb) X IBW] + (0.26 X IBW)] X 50 mg/mL iron dextran.
- At discharge prescribe ferrous gluconate 325mg bid.

Blood transfusion

- Reserve for symptomatic severe anemia, especially in the setting of active bleeding.
- Important to limit transfusions in adolescent girls to avoid future isoimmunization.
- In general healthy adolescents can tolerate Hgb of 5-6 as long as the bleeding stops and iron therapy is provided.

Contraindications to estrogen

- Uncontrolled hypertension
- Migraines with aura
- Prior h/o DVT or PE
- Known thrombogenic mutations (factor V Leiden; prothrombin mutation; protein S, protein C, and antithrombin deficiencies)
- H/o stroke
- Complicated valvular heart disease
- SLE with positive (or unknown) antiphospholipid antibodies
- Diabetes with nephropathy/retinopathy/ neuropathy
- Symptomatic gallbladder disease
- Lamotrigine: levels of lamotrigine decrease significantly during combined contraceptive use. If patient is taking lamotrigine for seizure disorder recommend avoiding combined contraceptives.

Inpatient Adolescent GYN Consultation Process

1. Pediatric surgical cases will be evaluated and managed by Peds surgery
2. For pts, 16YO or older, consults can be made to the GYN resident service/ generalists for evaluation/consult.
3. for pts <16YO for medical mgmt. issues (eg AUB, PID), where they are not having improvement of symptoms reach out to the resident service. Depending on attending comfort level, they may be able to assist.

Inpatient Follow up

- Patients should be referred Hematology and GYN and/or Adolescent medicine (patients age 12-18)