# Stemming the Crimson Tide: Heavy Menstrual Bleeding in Adolescents

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# 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 testerone/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)

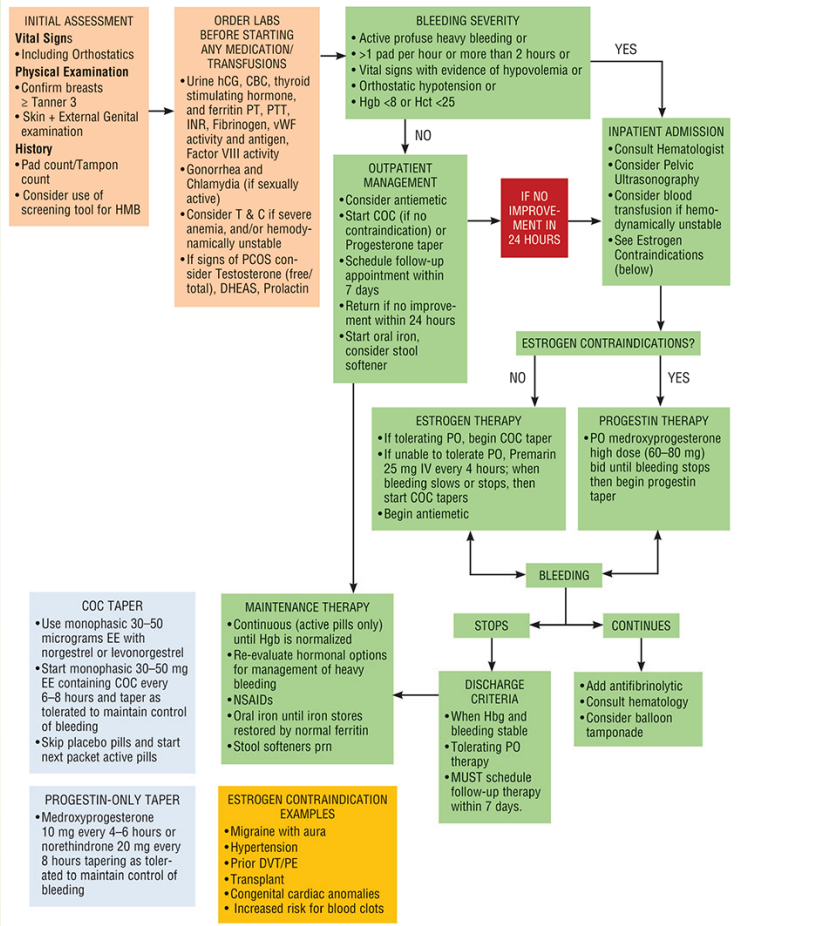
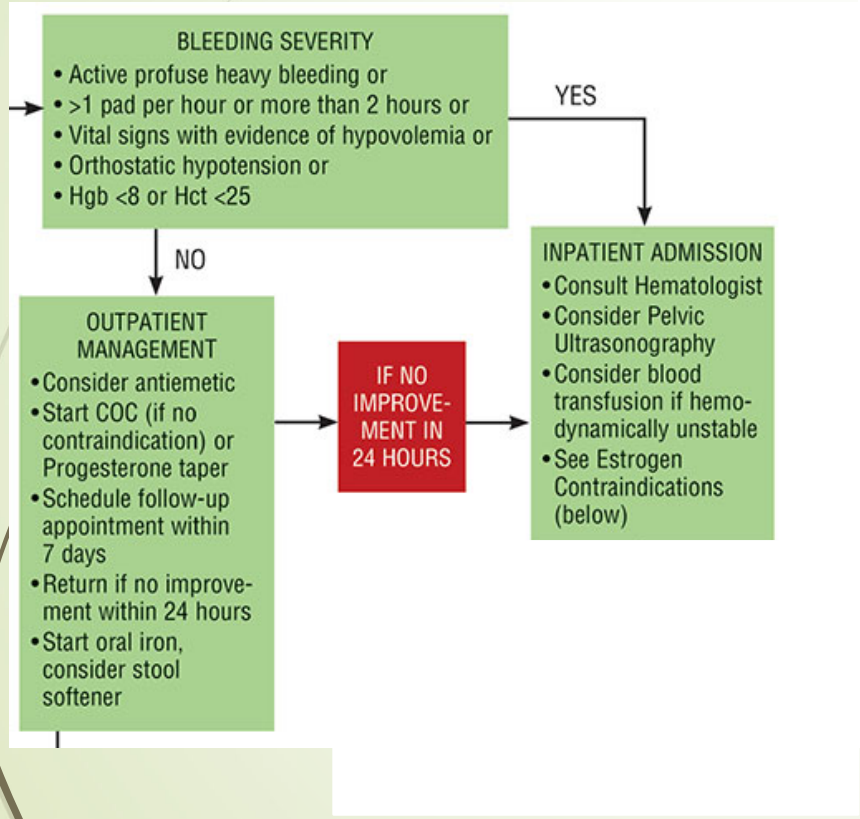



**Figure 2.** Approaches to Testing and Management. (Adapted from Ely JW, Kennedy CM, Clark EC, Bowdler NC. Abnormal uterine bleeding: a management algorithm. J Am Board Fam Med 2006;19:590–602.). Abbreviations: bid, two times a day; CBC, complete blood cell count; COC, combined oral contraceptive; DHEAS, dehydroepiandrosterone sulfate; DVT, deep vein thrombosis; EE, ethinyl estradiol; hCG, human chorionic gonadotropin; Hct, hematocrit; Hgb, hemoglobin; HMB, heavy menstrual bleeding; INR, international normalized ratio; IV, intravenously; NSAIDs, nonsteroidal antiinflammatory drugs; PCOS, polycystic ovary syndrome; 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




COC TAPER

- Use monophasic 30–50 micrograms EE with norgestrel or levonorgestrel
- Start monophasic 30–50 mg EE containing COC every 6–8 hours and taper as tolerated to maintain control of bleeding
- Skip placebo pills and start next packet active pills

PROGESTIN-ONLY TAPER

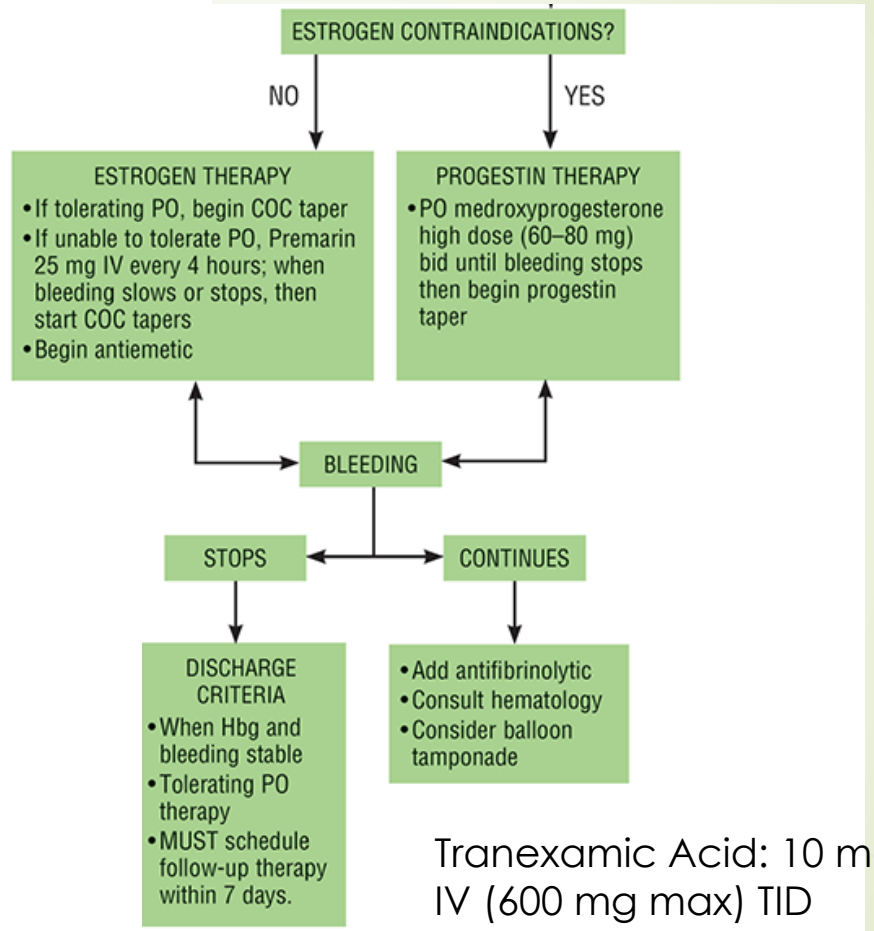
- Medroxyprogesterone 10 mg every 4–6 hours or norethindrone 20 mg every 8 hours tapering as tolerated to maintain control of bleeding

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

# 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


- Megan C. Brown, Michael H. White, Robert F. Sidonio; Obtaining a Von Willebrand Evaluation at Time of Acute Heavy Menstrual Bleeding Presentation Leads to Overestimation of Von Willebrand Levels. *Blood* 2019; 134 (Supplement_1): 627. doi: https://doi.org/10.1182/blood-2019-127258
- ACOG Committee Opinion #785. Screening and Management of Bleeding Disorders in Adolescents With Heavy Menstrual Bleeding. September 2019