**ABNORMAL UTERINE BLEEDING (AUB)**

* **Background**
  + Normal menses – duration typically 5 days, frequency every 21-35 days
  + **Preferred terms**
    - **Heavy menstrual bleeding** instead of menorrhagia
    - **Intermenstrual bleeding** instead of metorrhagia
    - In clinical practice, excessive menstrual blood loss should be based on the patient’s perception
    - Dysfunctional uterine bleeding (DUB) is often used to classify AUB with no definable cause and is not part of the PALM-COEIN system, it’s use is discouraged
* **PALM-COEIN**
  + Classification system introduced by FIGO used to describe abnormal bleeding patterns and etiology
  + **PALM – structural causes**
    - **P**olyp – AUB-P
    - **A**denomyosis – AUB-A
    - **L**eiomyoma – AUB-L
    - **M**alignancy/hyperplasia – AUB-M
  + **COEIN – non-structural causes**
    - **C**oagulopathy – AUB-C
    - **O**vulatory – AUB-O
    - **E**ndometrial – AUB-E
    - **I**diopathic – AUB-I
    - **N**ot otherwise specified – AUB-N
* **Diagnosis**
  + **Medical history**
    - Age of menarche/menopause
    - Bleeding pattern
    - Severity of bleeding (clots, # of pads)
    - Associated pain (severity, treatment)
    - Medical conditions
    - Surgical hx
    - Use of medications including herbal remedies
    - **Signs/sx of possible bleeding disorder – screen using the following (+screen comprises any of the following)**
      * Heavy menses since menarche
      * **One of the following:** 
        + Postpartum hemorrhage
        + Surgery-related bleeding
        + Bleeding associated with dental work
      * **Two or more of the following:** 
        + Bruising 1-2x/month
        + Epistaxis 1-2x/month
        + Frequent gum bleeding
        + Family h/o bleeding symptoms
      * A positive screen should prompt further evaluation including hematology consult and testing for von Willebrand factor & ristocetin cofactor.
  + **Physical examination**
    - General physical – findings of note include acne, hirsutism, thyroid nodule, acanthosis nigrans, petechiae, ecchymosis.
    - Pelvic exam
      * External – signs of trauma
      * +/- speculum exam – vaginal or cervical lesions
      * Bimanual exam
  + **Laboratory tests**
    - Pregnancy test (blood or urine)
    - CBC
    - Coagulation panel if + bleeding d/o screen
    - TSH
    - GC/Chl testing
  + **Imaging**
    - Transvaginal ultrasound
    - Consider transabdominal in adolescent patients
    - Office saline sonohysterography/hysteroscopy in an outpatient setting
    - MRI rarely needed
* **Age-based differential diagnosis**
  + **13-18 years**
    - Persistent anovulation due to the immaturity of the hypothalamic-pituitary-ovarian axis, which is normal and lasts 12 -18 months after menarche
    - Hormonal contraceptive use
    - Pregnancy
    - Pelvic infection/sexual trauma
    - Coagulopathy – up to 19% of adolescents with AUB who require hospitalization may have an underlying bleeding disorder
    - Tumors
  + **19-39 years**
    - Pregnancy
    - Structural lesions – polyps, leiomyoma
    - Anovulatory cycles (PCOS)
    - Hormonal contraception
    - Endometrial hyperplasia
    - Endometrial cancer is less likely, but may occur in this age group, consider endometrial biopsy (EMB) if failed medical management &/or have significant risk factors for prolonged unopposed estrogen stimulation (i.e. obesity/PCOS)
  + **40 years to menopause**
    - Anovulatory bleeding in response to declining ovarian function
    - Exclude pregnancy
    - Endometrial hyperplasia/cancer
    - Endometrial atrophy
    - Endometrial polyps/leiomyoma
    - **Women > 45 y/o with AUB should be evaluated by EMB**
* **Treatment**
  + Goals
    - Stop acute bleeding
    - Avoid further heavy, irregular bleeding
    - Provide contraception if desired
    - Prevent anemia, surgery, and decreased quality of life
  + **Medical therapy options for cessation of acute bleeding**
    - **Conjugated equine estrogen 25 mg IV every 4-6 hours X 24 hours**
      * Contraindications – breast cancer, VTE hx, liver dysfunction
    - **Combined oral contraceptives tid for 7 days**
      * Monophasic, 35 mcg of EE preferred
      * Contraindications – smoking > 35 y/o, HTN, VTE hx, CVA, CAD, migraine w/aura, breast cancer, liver disease, DM w/vascular involvement, heart disease, major surgery w/prolonged immobilization
    - **Medroxyprogesterone acetate 20 mg po tid for 7 days**
      * Contraindications – VTE hx, arterial thromboembolic diseases, breast cancer, liver disease
    - **Tranexamic acid 1.3 g po tid for 5 days or 10 mg/kg IV (max 600 mg) q 8 hours for 5 days**
      * Contraindications – VTE hx, impaired color vision, caution with co-administration of OCPs.
  + Medical/surgical options for long term management once acute bleeding is controlled
    - Combined hormonal contraceptives
    - Levonorgestrel releasing IUD
    - Cyclic progesterone therapy
    - Endometrial ablation
    - Hysteroscopy with polypectomy/myomectomy
    - Hysterectomy

**References:**

**ACOG Practice Bulletin # 128 Diagnosis of Abnormal Uterine Bleeding in Reproductive-Aged Women**

**ACOG Practice Bulletin # 136 Management of Abnormal Uterine Bleeding Associated with Ovulatory Dysfunction**

**ACOG Committee Opinion # 557 Management of Acute Abnormal Uterine Bleeding in Nonpregnant Reproductive-Aged Women**

**ACOG Committee Opinion # 785 Screening & Management of Bleeding Disorders in Adolescents with Heavy Menstrual Bleeding**