**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**