Abnormal Vaginal Bleeding & Menopause

Sara Whetstone MD, MHS
I have no disclosures
Objectives

- Define abnormal uterine bleeding (AUB)
- Describe algorithm for evaluating abnormal vaginal bleeding and abnormal uterine bleeding
- Name indications for hormone replacement therapy
- Describe evaluation of post-menopausal bleeding
Abnormal Vaginal Bleeding (AVB)
What is normal?

Normal parameters:
- Cycle interval: 24 – 35 days
- Menses: 4 – 7 days
- Blood loss: 30 – 45 mL

Onset
- By 15 years old *with* 2° sex characteristics
- Start evaluation at 13 years of age if no sexual development
Normal Menstrual Cycle

Requires:
Normal Menstrual Cycle

- **Regular menses**: functioning
- **Irregular menses**: not functioning

Diagram showing the changes in hormone levels (Follicle-stimulating hormone (FSH), luteinizing hormone (LH), oestrogen, progesterone) over the menstrual cycle, including phases such as follicular phase, ovulation, and luteal phase. The graph also includes changes in body temperature, ovarian activity, and uterine lining.
Abnormal Uterine Bleeding

• Definition:

Bleeding that is NOT normal
Older Definitions

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>normal</td>
<td>24 to 35 days, lasting from 2-7 days, and flowing &lt; 80 mL per cycle (ave. normal amount is 30-40 mL per cycle).</td>
</tr>
<tr>
<td>menorrhagia</td>
<td>blood loss &gt;80 mL/ cycle and/or menstrual periods lasting &gt;7 days</td>
</tr>
<tr>
<td>amenorrhea</td>
<td>absence of bleeding for at least three usual cycle lengths</td>
</tr>
<tr>
<td>oligomenorrhea</td>
<td>bleeding that occurs at an interval &gt; 35 days.</td>
</tr>
<tr>
<td>polymenorrhea</td>
<td>bleeding that occurs at an interval &lt; 24 days.</td>
</tr>
<tr>
<td>metrorrhagia</td>
<td>light bleeding at irregular intervals</td>
</tr>
<tr>
<td>menometrorrhagia</td>
<td>bleeding at irregular intervals that occurs between menstrual periods</td>
</tr>
<tr>
<td>intermenstrual bleeding</td>
<td>bleeding that occurs between menstrual periods and between expected 30 days.</td>
</tr>
<tr>
<td>premenstrual spotting</td>
<td>light bleeding preceding regular menses</td>
</tr>
<tr>
<td>post-coital bleeding</td>
<td>vaginal bleeding within 24 hours of vaginal intercourse.</td>
</tr>
</tbody>
</table>

Avoid these definitions
Initial approach to vaginal bleeding

Is the pt pregnant?

Pregnancy

If yes—viability, location, dating

Is it uterine?

If no, pelvic exam to evaluate uterine vs non uterine bleeding

• Non uterine includes cervix, vagina, urethra, anus

If uterine, what could be causing the bleeding?

• PALM-COEIN
PALM-COEIN

Structural abnormality

P polyps
A adenomyosis
L leiomyoma
M malignancy or hyperplasia
C coagulopathy
O ovulatory dysfunction
E endometrial
I iatrogenic
N not yet classified

Munro MG, et al., 2011
AUB-PAL (of PALM-COEIN)

**Polyp**
- Presents with:
  - spotting in between periods
  - post-coital spotting

**Adenomyosis**
- Presents with:
  - painful periods
  - painful intercourse
  - chronic pelvic pain
  - heavy menstrual bleeding

**Leiomyoma**
- Presents with:
  - heavy menstrual bleeding
M: Malignancy and hyperplasia (endometrial)

- Presentation:
  - Post-menopausal bleeding
  - Recurrent perimenopausal irregular bleeding
  - Chronic anovulatory pattern (PCOS) with irregular bleeding
AUB-C (coagulopathy)

- Clotting factor deficiency or defect
  - Liver disease
  - Congenital (Von Willebrands Disease)

- Platelet deficiency (thrombocytopenia) with platelet count <20,000/mm³
  - Idiopathic thrombocytopenic purpura (ITP)
  - Aplastic anemia

- Platelet function defects

- Anticoagulants
  - Supra-therapeutic anticoagulation: heavy menstrual bleeding
    **Therapeutic levels should not cause bleeding problems**
Screen for underlying disorder of hemostasis if any of

(A) Heavy menstrual bleeding since menarche

(B) One of the following
   Post-partum hemorrhage
   Bleeding associated with surgery
   Bleeding associated with dental work

(C) Two or more of the following
   Bruising 1-2 times per month
   Epistaxis 1-2 times per month
   Frequent gum bleeding
   Family history of bleeding symptoms

Evaluation
- CBC
- PTT/PT
- fibrinogen
- possibly
  vWF:Ag, vWF: rCO, FVIII

Kouides PA et Al. Fertil Steril 2005
# AUB – O (ovulatory dysfunction)

**Physiologic**
- Adolescence
- Peri-menopause
- Lactation
- Pregnancy

**Pathologic**
- Hyper-androgenic anovulation (PCOS, CAH)
- Hypothalamic dysfunction
- Hyper-prolactinemia
- Thyroid disease
- Primary pituitary disease
- Premature ovarian failure
- Iatrogenic (eg secondary to XRT or chemo)
- Medications

ACOG Practice Bulletin: Mgmt of Abnl Uterine Bleeding Associated with Ovulatory Dysfunction. 2013
AUB – E (endometrial)

+ **Idiopathic**
  + Unexplained heavy menstrual bleeding

+ **Endometritis**
  + Post-partum
  + Post-abortal endometritis
  + Endometritis component of PID
    + Note: In teens, PID commonly presents with abnormal bleeding (menorrhagia, IMB), not pelvic pain
    + Any teen with abnormal bleeding + pelvic pain requires bimanual exam to evaluate for PID
AUB – I (iatrogenic)

- Chronic steroids
- Progestin-containing contraceptives
- Intrauterine Contraception (IUC)
  - "Normal" side effect – breakthrough bleeding
  - Pregnancy (IUP or ectopic), perforation, expulsion
AUB – N (not yet classified)

- Chronic endometritis
- AVM
- Myometrial hypertrophy
AVB: History

- Is the patient pregnant?
  - Pregnancy symptoms, esp. breast tendernessness
  - Intercourse pattern
  - Contraceptive use

- Is it uterine?
  - Coincidence with bowel movement and wiping, during or after urination
  - Pain or irritation of vagina, introitus, vulva, perineum, or anal skin
Is bleeding ovulatory or anovulatory?
+ Bleeding pattern: regular, irregular, none
+ *Moliminal symptoms*: only in ovulatory cycles
+ Previous history of menstrual disorders
+ Recent onset weight gain or hirsutism
+ Menopausal symptoms
+ History of excess bleeding; coagulation disorders
+ Current and past medications; street drugs
+ Chronic medical illnesses or conditions
+ Nipple discharge from breasts
AVB: Physical Exam

- General: BMI > 30
- Skin: acne, hirsutism, acanthosis nigricans; bruising
- Breasts: galactorrhea
- Abdomen: uterine enlargement, abdominal pain
- Pelvic exam
  - Vulva and perineum
  - Anal and peri-anal skin
  - Speculum: vaginal walls and cervix
  - Bimanual: uterine enlargement, softness, masses
AVB: Laboratory

**Urine pregnancy test**
- Quantitative BhCG is unnecessary

**CBC**
- Find severe anemia; baseline value for observation
- Platelet estimation (detect thrombocytopenia)

**TSH, Prolactin**
- Check TSH for any AUB
- Check PRL for amenorrhea or recurrent anovulatory bleeds only

**FSH, LH**
- Levels are unnecessary
Mainly for evaluation of heavy menstrual bleeding if no response to treatment or suspect anatomic defect.

Not useful for demonstrating or excluding hyperplasia or cancer in premenopausal women.

Types of imaging: (1) pelvic ultrasound, (2) saline sonogram, (3) hysteroscopy.
Initial approach to vaginal bleeding

Is the pt pregnant?

Pregnancy
  • If yes—viability, location, dating

Is it uterine?

If no, pelvic exam to evaluate uterine vs non uterine bleeding
  • Non uterine includes cervix, vagina, urethra, anus

If uterine, what could be causing the bleeding?

Is the bleeding pattern regular?

PALM-COEIN
  Is the pt pregnant?
  Is it uterine?
  If uterine, what could be causing the bleeding?
Normal Menstrual Cycle

- Regular menses
  - Heavy menses bleeding
  - Intermenstrual bleeding
  - Post-coital bleeding

- Irregular menses
  - Not functioning

Normal menstrual cycle functioning (ovulatory):

- Regular menses
- Irregular menses
Regular, Heavy Menses

Differential Diagnosis

Anatomic
- Leiomyoma
- Polyp
- Adenomyosis

Coagulopathy
- VWD
- ITP
- Coumadin use

Idiopathic

Thyroid Disease

(aka heavy menstrual bleeding)
**Interlude: Thyroid disorders**

<table>
<thead>
<tr>
<th></th>
<th>HYPER &lt;sup&gt;thyroid&lt;/sup&gt;</th>
<th>HYPO &lt;sup&gt;thyroid&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency of abnormal cycles</td>
<td>21%</td>
<td>23%</td>
</tr>
<tr>
<td>Oligo/amenorrhea</td>
<td>63%</td>
<td>55%</td>
</tr>
<tr>
<td>Heavy bleeding</td>
<td>37%</td>
<td>30%</td>
</tr>
</tbody>
</table>

- Consider checking TSH in women with any type of AUB
- Only severe, uncorrected thyroid disease causes abnormal bleeding patterns

Case 1: Prolific Periods

- SR is a healthy 37yo woman with 12 months of abnormal bleeding. Her cycles are 29-32 days and her menses lasts for 8 days. She describes her cycles as heavy and has to change a tampon every hour the first 3 days. In addition, she has to get up at night to change her tampons/pads.
CASE 1: Prolific Periods

**Pregnancy**

- **NO**

  - Is the pt pregnant?

- **UTERINE**

  - Is it uterine?

  - If no, pelvic exam to evaluate uterine vs non uterine bleeding

- **YES**

  - If uterine, is the pattern regular or irregular?
Case 1: Evaluation

- **History**
  - Medications
  - Thyroid symptoms
  - Screen for coagulopathy

- **Exam**
  - Signs of bleeding disorder
  - Pelvic exam

- **Lab tests**
  - CBC with platelets
  - TSH
  - PT/PTT (if concerned for coagulopathy)
  - vWF:rCO, vWF:Ag, FVIII (if concerned for coagulopathy)

- **Imaging**
  - Pelvic ultrasound
Case 1: Treatment

- **Treat the underlying problem**
  - If structural lesion causing AUB, remove it
  - If evidence of coagulopathy, correct it
  - If thyroid function is abnormal, address it

- **Utilize therapies known to decrease bleeding**
  - Hormonal treatment (combined hormonal contraception or progestin-only methods including levonorgestrel IUS)
  - Non-hormonal treatment (NSAIDs or tranexamic acid)
  - Specialized GYN procedures (uterine artery embolization, endometrial ablation, or hysterectomy)
Case 2: Crazy Cycles

SW is a 29yo G2P2 woman with 9 months of abnormal bleeding. Her cycles vary in length from 25 to up to 90 days and her bleeding lasts for between 6 and 14 days. When she has her periods, her bleeding is heavy such that she has to change a tampon every 2 hours.
Approach to vaginal bleeding

Is the pt pregnant?

Pregnancy

- NO

Is it uterine?

If no, pelvic exam to evaluate uterine vs non uterine bleeding

- UTERINE

If uterine, is the pattern regular or irregular?

Regular bleeding pattern?

- NO!
Normal Menstrual Cycle

- Regular menses
  - Irregular bleeding
  - Oligomenorrhea
  - Amenorrhea

- Irregular menses (anovulatory)
Anovulatory Bleeding

In the absence of ovulation:

- Ovary does not make progesterone
- Continued endometrial proliferation
- Fragile endometrium bleeds erratically

Irregular bleeding
# AUB – O (ovulatory dysfunction)

<table>
<thead>
<tr>
<th><strong>Physiologic</strong></th>
<th><strong>Pathologic</strong></th>
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<tr>
<td>+ Adolescence</td>
<td>+ Hyper-androgenic anovulation (PCOS)</td>
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<tr>
<td>+ Peri-menopause</td>
<td>+ Hypothalamic dysfunction</td>
</tr>
<tr>
<td>+ Lactation</td>
<td>+ Hyper-prolactinemia</td>
</tr>
<tr>
<td>+ Pregnancy</td>
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<td></td>
<td>+ Primary pituitary disease</td>
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<td>+ Primary ovarian insufficiency</td>
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<td>+ Iatrogenic (eg secondary to XRT or chemo)</td>
</tr>
<tr>
<td></td>
<td>+ Medications</td>
</tr>
</tbody>
</table>

AUB – O (ovulatory dysfunction)

High Estrogen States
- Physiologic (menarche, perimenopause)
- Hyperandrogenic (PCOS/CAH/Cushing's)
- Systemic Disease (Thyroid, Liver/Renal Disease)

Low Estrogen States
- Hypothalamic (stress, anorexia)
- Pituitary (prolactinemia, Sheehan’s syndrome)
- Ovarian failure (POI or perimenopause)

Labs
- CBC
- TSH
- Androgens
- 21-OHP

Labs
- CBC
- TSH
- Prolactin
- FSH
Case 2: Crazy Cycles

**History**
- Medications
- Thyroid symptoms
- Chronic disease
- Galactorrhea
- Hot flashes, menopausal symptoms
- Hirsutism, symptoms of androgen excess

**Lab tests**
- CBC
- TSH
- Androgens (if irregular & heavy, no signs of hyperandrogenism)
- 21-OHP (if irregular & heavy)
- Prolactin (if infrequent, light menses or no menses)
- FSH (if infrequent or no menses in women <40yo, signs of hypoestrogenism)

**Exam**
- BMI
- Hirsutism
- Acne
- Acanthosis nigricans

**Imaging**
- Not required
  - Unless not responsive to treatment or abnormal exam
Case 2: Treatment Options

- **Goals**
  1. Stop bleeding
  2. Prevent irregular bleeding
  3. Provide contraception
  4. Protect endometrium

- **Treatment options**
  1. Progestin-only therapies (IUD, DMPA, oral progestins)
  2. Combined hormonal contraceptives
  3. Correct underlying endocrine abnormality
  4. Surgical management via hysterectomy
Anovulatory Bleeding

In the absence of ovulation:

- Ovary does not make progesterone
- Fragile endometrium bleeds erratically

Progestin therapy

Irregular bleeding
And in a month SW calls your office, saying that she is bleeding through a supertampon every hour. What treatment options does she have at this time?
## Medical Treatment for Acute Uterine Bleeding

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Dose</th>
<th>Dose Scheduled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conjugated equine estrogen</td>
<td>25mg IV</td>
<td>q4-6h x 24 hours</td>
</tr>
<tr>
<td>Combined oral contraception</td>
<td>Monophasic with at least 35mcg EE</td>
<td>TID x 7 days</td>
</tr>
<tr>
<td>Medroxyprogesterone acetate</td>
<td>20mg PO</td>
<td>TID x 7 days</td>
</tr>
<tr>
<td>Tranexamic acid</td>
<td>1.3g PO or 10mg/kg IV (max dose 600mg)</td>
<td>TID or q8h x 5 days max</td>
</tr>
</tbody>
</table>

ACOG Committee Opinion #557: Management of Acute Abnormal Uterine Bleeding in Nonpregnant Reproductive-Aged Women, 2020
Surgical Treatment for Acute Uterine Bleeding

- D&C
- Endometrial ablation
- Polypectomy or myomectomy
- Uterine artery embolization
- Hysterectomy
Case 2: Additional thoughts

Does SW need an endometrial biopsy?

Recommendations for endometrial biopsy (ACOG, 2012)

- AUB in women ≥ 45yo
  - Includes post-menopausal bleeding
- History of unopposed estrogen exposure
- Failed medical management
- Persistent AUB
Case 3: Additional thoughts

What if her endometrial stripe on ultrasound was 18mm?
Case 3: Additional thoughts

+ If SW were 46yo, would you recommend an endometrial biopsy?

+ If SW were 46yo and had regular but heavy menses, would you recommend an endometrial biopsy?

+ If SW were 46yo and her menses were becoming less frequent and were light, would you recommend an endometrial biopsy?
Perimenopausal bleeding

Trends in perimenopause

12% stop bleeding suddenly
18% have longer, heavier menses
70% have short irregular menses
Who should we biopsy in the perimenopausal period?

- Heavy, irregular bleeding? **YES**
- Risk factors for cancer? **YES**
- Perimenopausal infrequent/scant bleeding? **NO**
- Regular bleeding? **NO**
Case 3

+ TA is a 54yo G2P2 woman with 2 days of post-menopausal bleeding.

Post-menopausal bleeding is AUB!
Menopause
Definition

Menopause

“The final menstrual period, which can be confirmed after 12 consecutive months without a period. This time marks the permanent end of menstruation and fertility. It is a normal, natural event associated with reduced functioning of the ovaries, resulting in lower levels of ovarian hormones (primarily estrogen).”

North American Menopause Society, 2015
## Stages of Reproductive Aging

### Stages of Reproductive Aging Workshop (STRAW) - WHO

<table>
<thead>
<tr>
<th>STRAW</th>
<th>Final Menstrual Period (FMP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stages:</td>
<td>-5</td>
</tr>
<tr>
<td>Terminology:</td>
<td>Reproductive</td>
</tr>
<tr>
<td>Early</td>
<td>Peak</td>
</tr>
<tr>
<td>Duration of Stage:</td>
<td>variable</td>
</tr>
<tr>
<td>Menstrual Cycles:</td>
<td>variable to regular</td>
</tr>
<tr>
<td>Endocrine:</td>
<td>normal FSH</td>
</tr>
</tbody>
</table>

*Note: The stages and definitions may vary depending on the specific criteria used.
Pathophysiology of menopause organ changes

Sources: Lentz: Comprehensive Gynecology, 6E
Williams Textbook of Endocrinology, 12E

↓ Estradiol

CNS/ Vasomotor instability
- ↑ norepinephrine
- ↑ serotonin
- Narrow thermoregulatory setpoint in hypothalamus
  - Hot flashes
  - Night sweats
  - Sleep disturbance
  - Depression
  - Daytime fatigue

Urogenital mucosa
- ↓ collagen synthesis
- ↓ blood flow in vaginal epithelium
- Weakening of vaginal walls
- ↓ glycogen production
- ↓ energy source for lactobacillus
  - ↑ stress incontinence
  - ↑ pelvic organ prolapse
  - ↑ vaginal pH
  - ↑ dryness
  - ↑ irritation
  - ↑ infections
  - Dyspareunia

Cardiovascular
- ↑ total cholesterol
  - ↑ LDL
  - ↓ HDL
- ↓ prostacyclin
- ↑ endothelin
- ↓ NO synthase
- ↑ ACE → ↑ Ang II
- Vasoconstriction
- Endothelial dysfunction
- ↑ risk of atherosclerosis

Bones
- ↓ osteoclast apoptosis (e.g. via ↓ TGF-β)
- ↑ osteoclast maturation and survival
- ↓ RANK ligand
- ↓ OPG secretion by osteoblast
- Bone resorption > formation
- Osteoporosis

Estrogen
- Only if before plaque formation (i.e. during perimenopausal years)
- Once atherosclerotic plaques are formed, exogenous estrogen will destabilize plaques and lead to thrombus formation

- Trabecular bone loss > cortical bone in early stages
- Vertebral: most easily fractured due to high trabecular bone turnover
- ↓ collagen synthesis contributes to osteoporosis as well
- Weight-bearing exercises, vitamin D, and calcium are important lifestyle factors in reducing osteoporosis
Cardinal symptoms of menopause

**Vasomotor symptoms**
- Hot flashes
- Increase during menopausal transition & peak 1 year after menopause
- Related to narrowing of thermoregulatory zone

**Genitourinary syndrome of menopause**
- Vaginal atrophy secondary to hypoestrogenic state
- Physiologic and anatomic changes to genitourinary tract
- Symptoms include vaginal or vulvar dryness, discharge, itching, and dyspareunia
Treatment of vasomotor symptoms

+ Most effective treatment: systemic hormone therapy (HT) with estrogen therapy

If uterus present...

Estrogen + Progestin (EPT)

If uterus absent...

Estrogen alone (ET)
Indications for HT
(FDA-approved)

1. Vasomotor symptoms
2. Prevention of bone loss
3. Hypoestrogenism
   (caused by hypogonadism, oophorectomy, or POI)
4. Genitourinary syndrome of menopause (GSM)
   (or vulvo-vaginal atrophy)
### Risks/benefits of systemic HT for post-menopausal women

<table>
<thead>
<tr>
<th>Possible risk</th>
<th>Estrogen only</th>
<th>Estrogen/Progest in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart disease</td>
<td>No effect</td>
<td>↑</td>
</tr>
<tr>
<td>Stroke</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td>Venous thromboembolism</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td>Breast cancer</td>
<td>No effect</td>
<td>↑</td>
</tr>
<tr>
<td>Colon cancer</td>
<td>No effect</td>
<td>↓</td>
</tr>
<tr>
<td>Fractures</td>
<td>↓</td>
<td>↓</td>
</tr>
</tbody>
</table>
Risks of HT by age

Manson JE et al. JAMA 2013.
Risks and benefits of HT in women ages 50-59 or <10 years of menopause

Santen et al. J Clin Endocrinol Metab. 2010
Number of women benefitting from HT vs. number of women experiencing risks and/or benefits

Santen et al. 2010
Systemic hormone therapy (HT) options

(ACOG Bulletin 141: Management of menopausal symptoms)

Table 1. Treatment Options for Menopausal Vasomotor Symptoms

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Dosage/Regimen</th>
<th>Evidence of Benefit*</th>
<th>FDA Approved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hormonal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estrogen-alone or combined with progestin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Standard Dose</td>
<td>Conjugated estrogen 0.625 mg/d</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Micronized estradiol-17β 1 mg/d</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Transdermal estradiol-17β 0.0375-0.05 mg/d</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>• Low Dose</td>
<td>Conjugated estrogen 0.3–0.45 mg/d</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Micronized estradiol-17β 0.5 mg/d</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Transdermal estradiol-17β 0.025 mg/d</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>• Ultra-Low Dose</td>
<td>Micronized estradiol-17β 0.25 mg/d</td>
<td>Mixed</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Transdermal estradiol-17β 0.014 mg/d</td>
<td>Mixed</td>
<td>No</td>
</tr>
<tr>
<td>Estrogen combined with estrogen agonist/antagonist</td>
<td>Conjugated estrogen 0.45 mg/d and bazedoxifene 20 mg/d</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Progestin</td>
<td>Depot medroxyprogesterone acetate</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Testosterone</td>
<td></td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Tibolone</td>
<td>2.5 mg/d</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Compounded bioidentical hormones</td>
<td></td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Nonhormonal
Contraindications to systemic HT

- Unexplained vaginal bleeding
- Severe active liver disease
- Estrogen-sensitive breast or endometrial cancer
- Coronary heart disease
- Stroke
- Personal history or inherited high risk of venous thromboembolism
Non-hormonal treatments for vasomotor symptoms

- **SSRIs and SSNRI s**
  - Data mixed but RCTs support use
  - Paroxetine (7.5mg/day) – only non-hormonal therapy approved by FDA for treatment of vasomotor symptoms

- **Clonidine (0.1 mg/day)**
  - Limited data, small benefit in comparison to placebo

- **Gabapentin**
  - Similar efficacy to SSRIs/SSNRI s, reduce vasomotor symptoms by 50-60%
Treatment for genitourinary syndrome of menopause (GSM)

- Low dose vaginal estrogen preparations are effective and safe
- Progestin therapy is not needed
- Benefits of vaginal estrogen include:
  1. reduction of vaginal dryness, burning, & irritation
  2. improvement in lubrication, blood flow, & sensation
  3. prevention of recurrent UTIs
- Non-estrogen alternatives include: (1) ospemifene and (2) intra-vaginal DHEA
Overall benefit-to-risk ratio

+ HT is most effective treatment for vasomotor symptoms and genitourinary syndrome of menopause

+ Benefits of HT most likely outweigh the risks for symptomatic women who initiate HT < age 60 or who are < 10 years of menopause

+ “Appropriate dose, duration, regimen, and route of administration”
Case 3

TA is a 54yo G2P2 woman with 2 days of post-menopausal bleeding.

Post-menopausal bleeding is AUB!
Case 3: Differential diagnosis

- Endometrial hyperplasia/cancer
- Vaginal atrophy
- Endometrial atrophy
- Polyps (cervix, endometrium)
- Hormone replacement therapy
- Disease in adjacent organs (GU or GI)
- Post-radiation therapy
- Anticoagulation
- Herbal and dietary supplements
Case 3: Evaluation

- Endometrial biopsy is recommended as initial diagnostic test in post-menopausal bleeding.
Case 4: Need for EMB?

For post-menopausal women:

- Women with bleeding & endometrial lining on US $\geq$ 4mm
- Endometrium not adequately visualized
- Persistent bleeding
- Asymptomatic women with endometrial stripe $\geq$ 11mm
- Bleeding occurring after 6+ months of HRT
Figure 39. Coronal US image of the uterus after menopause shows a thin (3-mm) endometrial echo complex (arrow).
Summary

+ Have a broad differential for vaginal bleeding – don’t miss non-uterine etiologies of bleeding

+ Strive to characterize bleeding as regular and irregular

+ Utilize your refined differential diagnosis to develop a cost-conscious diagnostic plan

+ Understand indications for hormone therapy and counsel patients about benefits/risks (which are informed by age and years since menopause)

+ Use evidence-based approach to determine need for endometrial sampling in perimenopausal and post-menopausal women


Additional diagrams for evaluation of abnormal vaginal bleeding
Abnormal Vaginal Bleeding

Preg test POS

Pregnant

Abnormal Uterine Bleeding

Preg test NEG

Non-uterine bleeding

Cervix  Vagina  Urethra  Anus

Structural (PALM)

Non-structural (COEIN)