Abnormal Uterine Bleeding (AUB)

Michael L. Haugsdal, MD
Assistant Clinical Professor
Department of Obstetrics and Gynecology
University of Iowa Hospitals and Clinics

Objectives

1. Define AUB—contrasting acute with chronic clinical contexts.
2. Review the critical components for complete clinical evaluation of the patient with AUB.
3. Appreciate the significance of postmenopausal bleeding (PMB) and risk factors for endometrial cancer.
4. Discuss recommended use of endometrial biopsy and gynecologic ultrasound to evaluate AUB.
Abnormal Uterine Bleeding (AUB)

Objectives

5. Review the common etiologies and preferred FIGO classification system for the causes AUB.
6. Emphasize the direct relationship between obesity and causes and management of AUB.
7. Consider an age based differential diagnosis for AUB.
8. Highlight recommendations for medical and surgical management of AUB.
9. Appreciate the risks associated with surgical intervention for AUB—including endometrial ablation and hysterectomy.

Abnormal Uterine Bleeding (AUB)

Definition

Abnormal uterine bleeding is defined as bleeding from the uterine corpus that is abnormal in…

1. _________________________
2. _________________________
3. _________________________
4. _________________________

... in the absence of pregnancy.¹,²
Abnormal Uterine Bleeding (AUB)

Evaluation

Box 2. Diagnostic Evaluation of Abnormal Uterine Bleeding

Medical History
- Age of menarche and menopause
- Menstrual bleeding patterns
- Severity of bleeding (drips or flooding)
- Pain (severity and treatment)
- Medical conditions
- Surgical history
- Use of medications
- Symptoms and signs of possible hemostatic disorder

Physical Examination
- General physical
- Pelvic Examination
  - External
  - Speculum with Pap test, if needed*
  - Bimanual

Laboratory Tests
- Pregnancy test (blood or urine)
- Complete blood count
- Targeted screening for bleeding disorders (when indicated)*
- Thyroid-stimulating hormone level
- Chlamydia trachomatis

Available Diagnostic or Imaging Tests (when indicated)
- Saline infusion sonohysterography
- Transvaginal ultrasound
- Magnetic resonance imaging
- Hysteroscopy

Available Tissue Sampling Methods (when indicated)
- Office endometrial biopsy
- Hysteroscopy directed endometrial sampling (office or operating room)

*For the nonoldestent patient only.

For adolescents and adult patients with suspected bleeding disorders.

Acute Bleeding

Box 1. Clinical Screening for an Underlying Disorder of Hemostasis in the Patient With Excessive Menstrual Bleeding

Initial screening for an underlying disorder of hemostasis in patients with excessive menstrual bleeding should be structured by the medical history. A positive screening result* comprises the following circumstances:

- Heavy menstrual bleeding since menarche
- One of the following conditions:
  - Postpartum hemorrhage
  - Surgery-related bleeding
  - Bleeding associated with dental work
- Two or more of the following conditions:
  - Bruising, one to two times per month
  - Epistaxis, one to two times per month
  - Frequent gum bleeding
  - Family history of bleeding symptoms

*Patients with a positive screening result should be considered for further evaluation, including consultation with a hematologist and testing for von Willebrand factor and ristocetin cofactor.


Table 1. Laboratory Testing for the Evaluation of Patients With Acute Abnormal Uterine Bleeding

<table>
<thead>
<tr>
<th>Laboratory Evaluation</th>
<th>Specific Laboratory Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial laboratory testing</td>
<td>Complete blood count</td>
</tr>
<tr>
<td>Initial laboratory evaluation for</td>
<td>Blood type and cross match</td>
</tr>
<tr>
<td>disorders of hemostasis</td>
<td>Pregnancy test</td>
</tr>
<tr>
<td>Initial testing for von Willebrand</td>
<td>Partial thromboplastin time</td>
</tr>
<tr>
<td>disease*</td>
<td>Prothrombin time</td>
</tr>
<tr>
<td>Other laboratory tests to consider</td>
<td>Activated partial thromboplastin time</td>
</tr>
<tr>
<td></td>
<td>Fibrinogen</td>
</tr>
<tr>
<td></td>
<td>von Willebrand factor antigen*</td>
</tr>
<tr>
<td></td>
<td>Ristocetin cofactor assay*</td>
</tr>
<tr>
<td></td>
<td>Factor VIII*</td>
</tr>
<tr>
<td></td>
<td>Thyroid-stimulating hormone</td>
</tr>
<tr>
<td></td>
<td>Serum iron, total iron binding capacity, and</td>
</tr>
<tr>
<td></td>
<td>ferritin</td>
</tr>
<tr>
<td></td>
<td>Liver function tests</td>
</tr>
<tr>
<td></td>
<td>Oligomyel chlamomatis</td>
</tr>
</tbody>
</table>

*ADULT women who receive positive results for risk of bleeding disorders or who have abnormal initial laboratory test results for disorders of hemostasis should undergo testing for von Willebrand disease. Adolescents with heavy menses since menarche who present with acute abnormal uterine bleeding also should undergo testing for von Willebrand disease.

Consultation with a hematologist can aid in interpreting these test results. If any of these markers are abnormally low, a hematologist should be consulted.
### Abnormal Uterine Bleeding (AUB)

**Significance of Endometrial Thickness on TVUS for PMB**

Table 1. Endometrial Thickness and Cancer Findings in Postmenopausal Women With Bleeding

<table>
<thead>
<tr>
<th>Reference</th>
<th>Endometrial Thickness</th>
<th>Number of Women</th>
<th>Number of Cases of Cancer</th>
<th>Negative Predictive Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karlsson 1995</td>
<td>≤4 mm</td>
<td>1,168</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Ferrazzi 1996</td>
<td>≤4 mm</td>
<td>930</td>
<td>2</td>
<td>99.8%</td>
</tr>
<tr>
<td></td>
<td>≤5 mm</td>
<td></td>
<td>4</td>
<td>99.6%</td>
</tr>
<tr>
<td>Gull 2000</td>
<td>≤4 mm</td>
<td>163</td>
<td>1</td>
<td>99.4%</td>
</tr>
<tr>
<td>Epstein 2001</td>
<td>≤5 mm</td>
<td>97</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Gull 2003</td>
<td>≤4 mm</td>
<td>394</td>
<td>0</td>
<td>100%</td>
</tr>
</tbody>
</table>

* Determined by transvaginal ultrasonography


---

**Abnormal Uterine Bleeding (AUB)**

**Classification**

![Abnormal Uterine Bleeding (AUB)](image)

**Fig. 1.** Basic PALM–COEIN classification system for the causes of abnormal uterine bleeding in nonpregnant women of reproductive age. This system, approved by the International Federation of Gynecology and Obstetrics, uses the term AUB paired with descriptive terms that describe associated bleeding patterns (HMB or IMB), or a qualifying letter (or letters), or both to indicate its etiology (or etiologies). Modified from Munro MC, Critchley HO, Broder MS, Fraser IS. FIGO classification system (PALM–COEIN) for causes of abnormal uterine bleeding in nongravid women of reproductive age. FIGO Working Group on Menstrual Disorders. Int J Gynaecol Obstet 2011;113:3–13.

---

Abnormal Uterine Bleeding (AUB)

Medical Management of Acute AUB

<table>
<thead>
<tr>
<th>Drug</th>
<th>Source</th>
<th>Suggested Dose</th>
<th>Dose Schedule</th>
<th>Potential Contraindications and Precautions According to FDA Labeling*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conjugated equine estrogen</td>
<td>DeVore GR, Owens D, Kase N. Use of intravenous Premarin in the treatment of dysfunctional uterine bleeding—a double-blind randomized control study. Obstet Gynecol 1982;59: 265–91.</td>
<td>25 mg IV</td>
<td>Every 4–6 hours for 24 hours</td>
<td>Contraindications include, but are not limited to, breast cancer, active or past venous thrombosis or arterial thromboembolic disease, and liver dysfunction or disease. The agent should be used with caution in patients with cardiovascular or thromboembolic risk factors.</td>
</tr>
<tr>
<td>Combined oral contraceptives</td>
<td>Munro MG, Mainor N, Basu R, Brisinger M, Barreda L. Oral medroxyprogesterone acetate and combination oral contraceptives for acute uterine bleeding: a randomized controlled trial. Obstet Gynecol 2006;108:924–9.</td>
<td>Monophasic combined oral contraceptive that contains 35 micrograms of ethinyl estradiol</td>
<td>Three times per day for 7 days</td>
<td>Contraindications include, but are not limited to, cigarette smoking (in women aged 35 years or older), hypertension, history of deep vein thrombosis or pulmonary embolism, known thromboembolic disorders, cerebrovascular disease, ischemic heart disease, migraine with aura, current or past breast cancer, severe liver disease, diabetes with vascular involvement, valvular heart disease with complications, and major surgery with prolonged immobilization.</td>
</tr>
</tbody>
</table>

Abnormal Uterine Bleeding (AUB)


