Abnormal Uterine Bleeding (AUB)


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PRESENTATION

Management of uterine bleeding

Premenopausal females undergoing intensive treatment (i.e., chemotherapy or stem cell transplant)

Note: Consult General Gynecology for post-menopausal women

OCP = oral contraceptive pill
LFT = liver function test

1 Consider Fertility Specialist consult if patient desires fertility
2 Leuprolide IM administration:
   - For IM administration, platelets must be ≥ 50 K/microliter. Transfuse if platelet level is < 50 K/microliter.
   - May take two weeks for optimal effect
   - Patient may have a two-week post-leuprolide withdrawal bleed
   - Repeat leuprolide injection in 3 months
   - Patients planned for stem cell transplant should receive injection 1 month prior to procedure
   - Contraception should be recommended in women of childbearing potential as it is not ensured with leuprolide
   - Contraindicated in women who are pregnant or breastfeeding

TREATMENT

- On admission, give leuprolide 11.25 mg IM
  - and consider patient on monophasic continuous OCP (skip placebo pills)
  - Consider OCP taper if bleeding occurs

Contraindication to OCP?

- On admission, give leuprolide 11.25 mg IM, check baseline LFTs, and start patient on monophasic continuous OCP (skip placebo pills), see Appendix A
- Consider OCP taper if bleeding occurs

Contraindication to OCP?

Immediately when bleeding occurs, perform all of the following:

- Start OCP taper (three times a day for 3 days)
- Give leuprolide 11.25 mg IM
- Platelet transfusion if platelet level is < 20-30 K/microliter
- Reassess patient for bleeding after 24-48 hours

Bleeding persists?

- Yes
  - Consult General Gynecology
  - Platelet transfusion if platelet level is < 20-30 K/microliter
  - Primary team to manage cancer and monitor for bleeding

- No, has improved

OCP taper [use any monophasic OCP (see Appendix A)]:

- PO three times daily for 3 days, then
- PO twice daily for 3 days, then
- PO once daily continuously (skip placebo pills)

4 Contraindications to OCP:

- History of breast cancer
- High risk of arterial or venous thrombosis (e.g., active or history of DVT/PE, severe or uncontrolled hypertension, active tobacco use in females greater than 35 years of age, known vascular disease)
- No oral intake

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Approved by the Executive Committee of the Medical Staff on 03/23/2021

Note: This algorithm is intended for use in hematologic malignancies
Abnormal Uterine Bleeding (AUB)

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**CONTRAINDICATIONS TO OCP**

- **History of breast cancer**
  - Yes → Uterine bleeding?
    - Yes → Consult General Gynecology (see Appendix B)
    - No → Give leuprolide 11.25 mg IM\(^2\) for prevention (do not add OCP)

- **High risk of arterial or venous thrombosis**
  - Yes → Uterine bleeding?
    - Yes → Give leuprolide 11.25 mg IM\(^2\) for prevention (do not add OCP)
    - No → Give leuprolide\(^2\) 11.25 mg IM for prevention (do not add OCP)

- **No oral intake**
  - Yes → Uterine bleeding?
    - Yes → Choose one:
      - Await oral intake or
      - Insert one OCP intravaginal once daily or
      - Apply estrogen/progesterone transdermal patch and
      - Give leuprolide 11.25 mg IM\(^2\)
    - No → Consult General Gynecology (see Appendix B)

**TREATMENT\(^1\)**

- **Give leuprolide 11.25 mg IM\(^2\) (do not add OCP)**
- **May add tranexamic acid 1300 mg PO 3 times a day for 5 days for heavy bleeding (see Appendix A)**

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\(^1\) See Appendix A - Dosing Recommendations

\(^2\) Leuprolide IM administration:
  - For IM administration, platelets must be ≥ 50 K/microliter. Transfuse if platelets < 50 K/microliter.
  - Repeat leuprolide injection in 3 months
  - May take two weeks for optimal effect
  - Patients planned for stem cell transplant should receive injection 1 month prior to procedure
  - Contraception should be recommended in women of childbearing potential as it is not ensured with leuprolide
  - Contraindicated in women who are pregnant or breastfeeding

\(^3\) OCP taper [use any monophasic OCP (see Appendix A)]:
  - Intravaginal three times daily for 3 days
  - Intravaginal twice daily for 3 days
  - Intravaginal once daily continuously (skip placebo pills)
### APPENDIX A: Dosing Recommendations

<table>
<thead>
<tr>
<th>Product</th>
<th>Dosage Form</th>
<th>Strength</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethinyl (EE) estradiol/norgestrel (Lo/Ovral®, Cryselle®)</td>
<td>Tablet</td>
<td>0.03 mg/0.3 mg</td>
<td>• Monophasic OCP • PO or intravaginal (skip placebo pills)</td>
</tr>
<tr>
<td>Ethinyl estradiol/desogestrel (Desogen®, Ortho-CEPT®)</td>
<td>Tablet</td>
<td>0.03 mg/0.15 mg</td>
<td>• Monophasic OCP • PO or intravaginal (skip placebo pills)</td>
</tr>
<tr>
<td>Ethinyl estradiol/norethindrone (Ortho-Novum® 1/35)</td>
<td>Tablet</td>
<td>0.035 mg/1 mg</td>
<td>• Monophasic OCP • PO or intravaginal (skip placebo pills)</td>
</tr>
<tr>
<td>Ethinyl estradiol/levonorgestrel1 (Seasonique®)</td>
<td>Tablet</td>
<td>0.03 mg/0.15 mg</td>
<td>• Monophasic OCP • Consider prescribing at discharge for continuous OCP</td>
</tr>
<tr>
<td>Ethinyl estradiol/norelgestromin (Xulane® Patch)</td>
<td>Patch</td>
<td>35 mcg/150 mcg per day</td>
<td>Apply one patch each week. Skip patch-free week if using to prevent vaginal bleeding.</td>
</tr>
<tr>
<td>Medroxyprogesterone acetate (Depo-Provera®)</td>
<td>IM injection</td>
<td>150 mg</td>
<td>For IM administration, platelets must be ≥ 50 K/microliter. Transfuse if platelets &lt; 50 K/microliter. Every 3 months</td>
</tr>
<tr>
<td>Hormonal Agents</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estrogens, conjugated, equine (Premarin®)</td>
<td>IV injection</td>
<td>25 mg/5 mL</td>
<td>25 mg IV every 6 hours for 24 hours</td>
</tr>
<tr>
<td>Medroxyprogesterone acetate (Provera®)</td>
<td>Tablet</td>
<td>2.5 mg</td>
<td>10 mg PO every 1-2 hours to total (60-120 mg), then 10 mg PO three times a day</td>
</tr>
<tr>
<td>Medroxyprogesterone acetate (Megace®)</td>
<td>Tablet</td>
<td>10 mg</td>
<td>20-40mg PO once daily</td>
</tr>
<tr>
<td>Norethindrone acetate (Aygestin®)</td>
<td>Tablet</td>
<td>5 mg</td>
<td>• 5 mg once daily for light bleeding or</td>
</tr>
<tr>
<td>Progesterone (Prometrium®)</td>
<td>Capsule</td>
<td>100 mg</td>
<td>5 mg three times daily for heavy bleeding</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leuproide acetate (Lupron® Depot)</td>
<td>IM injection</td>
<td>11.25 mg</td>
<td>• Contraindicated in women who are pregnant or breastfeeding</td>
</tr>
</tbody>
</table>
| Tranexamic acid1 (Lysteda™)                  | Tablet      | 650 mg         | • 0.5-1 g/hour IV infusion
• 1-2 g PO every 2-3 hours
• 1-2 g (4-8 mL) PO every 2-3 hours
• Consult Benign Hematology                  |
| Aminocaproic acid (Amicar®)                  | IV injection| 500 mg         |                                                                          |
|                                              | Tablet      | 500 mg         |                                                                          |
|                                              | Oral Solution| 25% (250 mg/mL)|                                                                          |

EE = ethinyl estradiol

1Not on MD Anderson Formulary

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APPENDIX B: Gynecology Options

<table>
<thead>
<tr>
<th>Medical options:</th>
<th>Surgical options:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(See Appendix A for Dosing Recommendations)</td>
<td></td>
</tr>
<tr>
<td>● Estrogen short-term for severe bleeding in breast cancer</td>
<td>● Dilation and curettage (D&amp;C)</td>
</tr>
<tr>
<td>● IV estrogen for severe bleeding</td>
<td>● Endometrial ablation (hysterectomy if ablation unsuccessful and blood indices stabilized)</td>
</tr>
<tr>
<td>● Medroxyprogesterone acetate or other hormonal options</td>
<td>● Balloon tamponade</td>
</tr>
<tr>
<td>● Leuprolide – may preserve fertility</td>
<td>● Uterine artery embolization (UAE)</td>
</tr>
<tr>
<td>● Aminocaproic acid, consult Benign Hematology</td>
<td></td>
</tr>
<tr>
<td>● Consider thromboelastogram (TEG) for diagnosis of coagulation abnormalities</td>
<td></td>
</tr>
</tbody>
</table>
SUGGESTED READINGS


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DEVELOPMENT CREDITS

This practice consensus statement is based on majority expert opinion of the Abnormal Uterine Bleeding workgroup at the University of Texas MD Anderson Cancer Center for the patient population. These experts included:

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