Abnormal vs. dysfunctional uterine bleeding: What’s the difference?

Sort out the differences between uterine bleeding that’s abnormal and that which is dysfunctional. Then teach your patient about new treatments that are available for these sometimes-dangerous conditions.

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Many women have variations in their menstrual cycle, such as changes in frequency, duration, or amount of flow, or spotting between their periods. This abnormal uterine bleeding (AUB) may have various causes, some of them benign. But when AUB is related to changes in hormones that directly affect the menstruation cycle, the condition is called dysfunctional uterine bleeding (DUB).

Make no mistake, AUB and DUB can be incapacitating because of either the fear of flooding or feeling weak from blood loss. A woman who’s experiencing abnormalities in her menstrual cycle should be evaluated to determine the reason.

What’s normal, what’s not
To better understand abnormal bleeding, let’s first review the normal menstrual cycle. Secreted by the pituitary gland, follicle-stimulating hormone (FSH) tells the ovaries to ripen an egg in a follicle and to begin producing estrogen. The presence of estrogen causes the uterine lining to proliferate.

As the estrogen level peaks, the pituitary releases luteinizing hormone (LH), which stimulates the follicle to release the egg. The follicle, now called the corpus luteum, begins producing progesterone to get the uterine lining (endometrium) ready for egg implantation. Fourteen days after egg release, the progesterone level decreases dramatically. Menstruation occurs if the egg wasn’t fertilized.

On average, the menstrual cycle occurs every 21 to 35 days and lasts from 2 to 7 days. Normal blood flow is 30 to 80 ml.

Bleeding that’s not normal includes:

- **menorrhagia**—blood flow of more than 80 ml or that lasts longer than 7 days
- **polymenorrhea**—bleeding cycles less than 21 days apart
- **oligomenorrhea**—bleeding cycles more than 35 days apart.

Understanding DUB
Dysfunctional uterine bleeding occurs when the normal cycle of menstruation is disrupted, usually due to anovulation (failure to ovulate) that’s unrelated to another illness. Ovulation failure is the most common type of DUB in adolescents and in women who are reaching perimenopause.

In anovulatory DUB, estrogen is continually secreted but an egg never ripens in the follicle. Because an egg is never released, progesterone is never produced from the corpus luteum to counteract the uterine lining proliferation. Eventually the uterine lining outgrows its blood supply and sloughs off at irregular intervals.

Because an egg was never produced, the premenstrual and menstrual symptoms associated with ovulation and progesterone don’t occur, and the uterine bleeding is usually painless. The effects of unopposed estrogen on the uterine lining have been directly linked to endometrial hyperplasia and cancer.

Dysfunctional uterine bleeding can occur with declining estrogen levels at the end of a woman’s reproductive life. Although the ovaries may still be stimulated to produce follicular ripening, they make only a very
small amount of estrogen. This results in irregular shedding of the endometrium lining. Because the amount of lining proliferation is less, bleeding is usually less copious.

**What’s AUB?**
Bleeding that differs in quantity or timing from a woman’s usual menstrual flow is considered AUB. For instance, a woman may bleed more heavily during one period and more lightly the next, spot between periods, or have a shorter or longer interval between periods. Some women may bleed for less than 2 days or more than 7 days.

Women who bleed heavily on a regular basis most likely have an ovulatory cycle problem rather than an anovulatory cycle one. Because these women are usually ovulating, they tend to experience premenstrual symptoms and cramping.

So what causes AUB? The most common causes are pregnancy and pregnancy-related conditions. The list of other causes is extensive and includes infections of the genital tract, fibroids, malignancies, medications, blood dyscrasias, and disorders of the thyroid gland, adrenal gland, kidney, or liver. Even stress can cause AUB.

**Sorting out risk factors**
Any woman is at risk for AUB, while those who are younger than 20 or older than 40 are at higher risk for DUB. That’s because women in these age-groups, who are at the beginning or end of their reproductive lives, are most likely to experience hormonal imbalance and anovulation.

Women at highest risk for DUB include those who:
- are overweight, because hormones involved in ovulation aren’t readily available from fat stores
- exercise excessively, because they don’t have enough body fat to maintain a menstrual cycle
- are under a great deal of stress
- have polycystic ovarian syndrome.

**Evaluating your patient**
If your patient has a change in her uterine bleeding pattern, take a thorough history and prepare her for a physical examination and diagnostic testing to determine if she has AUB or DUB. When you take her history, find out if she or anyone in her family has a history of cancer, endocrine disorders, or bleeding diseases that could cause AUB. For example, a clotting disorder such as von Willebrand’s disease can cause AUB.

Ask her to use a menstruation calendar to keep track of when periods start and stop, the amount of bleeding, contraceptive use, sexual activity, and any problems such as pain, clots, postcoital bleeding, or bleeding heavy enough to soak a pad or tampon every 2 hours. Also ask her to take her temperature each morning before she gets out of bed and record it on the calendar. A change in body temperature can indicate ovulation.

Ask her if she ever feels light-headed and dizzy, which can be symptoms of anemia related to blood loss. Also document her diet and exercise pattern and find out if she’s under any unusual stress.

She’ll need a pelvic and bimanual examination to assess for ovarian or uterine masses and signs of pelvic inflammatory disease. Depending on her symptoms, she may also need lab tests, such as a pregnancy test, complete blood cell count, platelet count, coagulation studies, and levels of ferritin and hormones, such as thyroid-stimulating hormone and prolactin.

Women over age 35 and those at high risk for endometrial cancer, such as those with morbid obesity, diabetes, chronic hypertension, or long-standing anovulation, will need an endometrial biopsy. The procedure can cause mild discomfort, but it takes only about 5 minutes. You can tell your patient to take ibuprofen 1 hour before the procedure, unless it’s contraindicated for her.

She’ll also need a transvaginal ultrasound, which may be combined with a uterine saline infusion (transvaginal sonolhysterography) for better detection of abnormalities.

The effects of estrogen on the uterine lining have been linked to endometrial hyperplasia and cancer.
How to treat your patient

After your patient has received a diagnosis, she’ll need treatment to stop the bleeding, restore a normal menstrual cycle, and maintain hemodynamic stability. Treatment depends on whether the cause of bleeding is anovulatory or ovulatory. Treatment options include the following.

• **Drug therapy.** A patient with DUB who’s hemodynamically unstable needs volume resuscitation and intravenous estrogen to make the endometrial lining grow rapidly to cover the exposed epithelial surfaces. Once bleeding is stopped, she can take combined oral contraceptives that contain both estrogen and progesterone. Combination contraceptives prevent prolonged estrogen exposure to the endometrium because they’re a combination of estrogen and progestin. She can also use this treatment if she’s still bleeding, as long as she’s hemodynamically stable.

  If she can’t take combined contraceptives due to thromboembolism risk, she can take progestins for 5 to 12 days a month to oppose estrogen’s effect on the endometrium. When she stops taking progestin each month, she’ll have a controlled withdrawal bleed.

  Some women benefit from an intrauterine device (IUD) that contains progestosterone. This type of IUD works well because it directly counteracts the effects of estrogen on the endometrium and decreases blood loss; it also provides contraception.

  Some women with anovulatory DUB may need leuprolide acetate (Lupron), which reduces FSH and LH levels and causes amenorrhea or chemical menopause. Patients typically use this therapy for 6 months or less; they’ll need to be monitored for osteoporosis and other menopause symptoms. The goal of this therapy is to break the anovulatory cycle or prepare the body for further intervention.

  If a patient is having ovulation-related AUB, she can take nonsteroidal anti-inflammatory drugs (NSAIDs), such as naproxen, ibuprofen, or mefenamic acid, to decrease blood loss. The buildup of the endometrium in the presence of estrogen and progesterone produces prostaglandins. NSAIDs decrease prostaglandin production and ease uterine cramping, decreasing blood flow and pain. These drugs are more effective in decreasing the quantity of blood flow in cyclic ovulatory bleeding than in irregular anovulatory bleeding.

  Combination estrogen and progesterone contraceptives are also very effective in controlling excessive ovulatory bleeding. These contraceptives also lessen some of the symptoms associated with premenstrual syndrome (and, as a bonus, some even control acne).

• **Invasive interventions.** Some women with AUB or DUB need interventions other than medications. If bleeding continues, a hysteroscopy will allow the health care provider to visualize the inside of the uterus. If she doesn’t wish to have children in the future, the patient may be a candidate for endometrial ablation, which uses various techniques such as microwave or radiofrequency energy, or cryoblation to destroy the uterine lining. Ablation has been very successful in decreasing or completely stopping the menstrual cycles and DUB, but it will leave the patient infertile.

  If the patient has fibroids that are causing the excessive bleeding, uterine artery embolization stops the blood flow directly to the fibroids. Losing their blood source, the fibroids become ischemic and shrink.

  In the past, dilatation and curettage (D&C) was routinely performed for AUB and DUB. But because this procedure doesn’t cure the underlying problem, most patients continued having bleeding problems. For this reason, D&C is now performed only to treat hemorrhage that doesn’t respond to medical therapy.

  Hysterectomy was once another common treatment for AUB and DUB, but now it’s used only as a last resort. The ovaries are preserved whenever possible to help prevent menopausal problems.

**Welcome relief**

Recent advances in the diagnosis and management of AUB and DUB have improved the outcome of these troubling conditions for women of all ages. You play a major role in recognizing these potentially serious problems and educating your patients about the many treatment options available.

**SELECTED REFERENCES**


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