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What You Need to Know Abnormal Uterine Bleeding

Abnormal uterine bleeding (AUB), also known as dysfunctional uterine bleeding, is a common problem for menstruating women, particularly those at the beginning (adolescence) and end (perimenopause) of their reproductive years.^{1,2}

The majority of AUB cases occur due to anovulation: Continuous estrogen secretion unopposed by progesterone release from the corpus luteum stimulates thickening of the endometrial lining, and leads to an imbalance in prostaglandin synthesis.^{1,3} The lining thickens until it outgrows its blood supply, then breaks down and sheds from the uterus in an irregular, dysynchronous manner. Chronic stimulation with low levels of estrogen results in infrequent, light AUB, while high estrogen levels cause frequent, heavy bleeding.¹

A lesser number of AUB cases occur with long ovulatory cycles (oligomenorrhea, periods >35 days apart) due to prolonged progesterone secretion and/or an inadequate release of vasoconstrictive prostaglandins.^{1,3} In these cases, bleeding tends to be predictable but heavy and extended.

AUB is a diagnosis of exclusion—one arrived at after medical, pharmaceutical, and structural causes of excessive uterine bleeding have been ruled out.^{1,3}

AUB's Toll on Women

While rarely life-threatening, AUB exacts a large emotional and physical toll on women. Women with heavy periods work an estimated 3.6 fewer weeks per year and lose an estimated \$1,692 annually in wages compared with other women in the general workforce.⁴

Heavy periods are inconvenient and potentially embarrassing (if leakage occurs due to excessive flow). AUB can substantially impair a woman's quality of life, leading her not only to miss work but also social and athletic events. It can make it difficult for her to leave the house and lead a normal lifestyle at times and can interfere with sexual activity.

Heavy periods can cause pain and discomfort and increase the risk for iron-deficiency anemia.^{2,5} Acute excessive bleeding can lead to hemodynamic instability, requiring hospitalization for fluid volume management, blood transfusion, and/or intravenous estrogen therapy (which prompts the endometrium to grow rapidly and cover exposed epithelial surfaces).^{2,5} Unopposed estrogen release is linked to an increased risk for endometrial hyperplasia and carcinoma, while anovulation is associated with infertility.^{2,3}

Medical Treatment Strategies

Depending on the underlying etiology, the goal of treatment is to stabilize the endometrium and allow for appropriate endometrial sloughing, and/or correct prostaglandin imbalances. A number of medical strategies can be employed to manage AUB (see table).

Hormonal Contraceptives

The most common treatment for anovulatory uterine bleeding is to prescribe combined hormonal methods (the pill, patch, or vaginal ring) or an oral progestin (e.g., medroxyprogesterone 5 mg daily for 10 to 12 days each month).³ These hormones cycle the endometrium to prevent excessive tissue buildup and induce regular withdrawal bleeding to slough off the endometrium. Alternatively, combined OCs can be prescribed on an extended schedule to completely suppress the endometrium and prevent withdrawal bleeding.³ Other options include depot medroxyprogesterone acetate (DMPA) injections and the levonorgestrel intrauterine system (LNG IUS), both of which significantly reduce blood loss among users, often leading to secondary amenorrhea.³

NSAIDs

Nonsteroidal anti-inflammatory agents (NSAIDs) can be prescribed for the first three days of menstruation each month to decrease blood flow. NSAIDs work by correcting prostaglandin imbalances and causing vasoconstriction. Regimens that have been shown to be effective for AUB include ibuprofen 200 to 400 mg every 4 to 6 hours, mefenamic acid 500 mg to start with and 250 mg every 6 hours thereafter, or naproxen 275 mg every 8 hours.³

Surgical Treatment Strategies

Many patients experience relief from AUB with hormonal agents and NSAIDs.² For those who fail medical therapies or for whom hormonal contraceptives are contraindicated, surgical procedures may be an option.

Hysterectomy

Of the approximately 600,000 hysterectomies performed annually in the US, 11% are estimated to be for menstrual disorders.^{6,7} Hysterectomy has a high complication rate and is more costly than medical therapies, but also results in high patient satisfaction and health-related quality of life scores.^{8,9} Women who have coped with AUB for many years may elect hysterectomy as a definitive cure for their discomfort.

Endometrial Ablation

A well-accepted alternative to hysterectomy is a surgical technique called endometrial ablation, which has a shorter postsurgical recovery time. Candidates include patients who prefer not to undergo major surgery or who are not candidates for hysterectomy. Women who wish to become pregnant in the future are not appropriate candidates, as postablation pregnancies can be problematic. Often, leuprolide acetate, medroxyprogesterone acetate, or danazol is prescribed prior to surgery to thin the endometrium.² There are a number of ablation techniques. First-generation techniques (hysteroscopic laser ablation, transcervical endometrial resection, and rollerball endometrial ablation) tend to be more operator- and skill-dependent and are associated with greater risk, whereas second-generation techniques (thermal balloon endometrial ablation, endometrial ablation by hysteroscopic instillation of hot saline solution, microwave endometrial ablation, cryoendometrial ablation, endometrial laser thermal ablation, and bipolar impedance-controlled endometrial ablation) are simpler to perform, but don't allow for direct visualization and detection of abnormal tissue.⁸ The ablation technique has been criticized because some patients may not see complete resolution of AUB and may require subsequent hysterectomy (results vary depending on the method employed and the skill of the surgeon).^{8,10-14} Despite the risk of treatment failure, one study documents patient

preference for endometrial ablation—and for the LNG IUS—over hysterectomy for the treatment of AUB.¹⁴

1. Dodds N, Sinert R. Dysfunctional uterine bleeding. *Emedicine*. Updated November 12, 2007. www.emedicine.com/emerg/topic155.htm. Accessed April 24, 2008.
2. Behera MA, Price TM, Queenan JT Jr. Dysfunctional uterine bleeding. *Emedicine*. Updated June 26, 2006. www.emedicine.com/med/topic2353.htm. Accessed April 24, 2008.
3. Nelson AL. Menstrual problems and common gynecologic concerns. In: Hatcher RA, Trussell J, Stewart F, et al, eds. *Contraceptive Technology*. 18th ed. New York: Ardent Media; 2004, pp 121-126.
4. Cote I, Jacobs P, Cumming D. Work loss associated with increased menstrual loss in the United States. *Obstet Gynecol*. 2002;100:683-687.
5. Ayers DMM, Lappin JES, Liptok LM. Abnormal vs. dysfunctional uterine bleeding: what's the difference? *Nursing*. 2004;34 suppl guide:11-14.
6. Popovic JR, Kozak LJ. National hospital discharge survey: annual summary, 1998. *Vital Health Stat*. 2000;148:1-194.
7. Farquhar CM, Steiner CA. Hysterectomy rates in the United States 1990-1997. *Obstet Gynecol*. 2002;99:229-234.
8. Bongers MY, Mol BWJ, Brolmann HAM. Current treatment of dysfunctional uterine bleeding. *Maturitas*. 2004;47:159-174.
9. Showstack J, Lin F, Learman LA, et al. Randomized trial of medical treatment versus hysterectomy for abnormal uterine bleeding: resource use in the Medicine or Surgery (Ms) trial. *Am J Obstet Gynecol*. 2006;194(2):332-338.
10. Jarrell A, Olsen ME. Patient satisfaction with thermal balloon endometrial ablation. *J Reprod Med*. 2003;48:635-636.
11. Van Zon-Rabelink IA, Vleugels MP, Merkus HM, et al. Efficacy and satisfaction rate comparing endometrial ablation by rollerball electrocoagulation to uterine balloon thermal ablation in a randomised controlled trial. *Eur J Obstet Gynecol Reprod Biol*. 2004;114:97-103.
12. Shama B, Preston J, Ray C. Microwave endometrial ablation for menorrhagia: outcome at 2 years—experience of a district general hospital. *J Obstet Gynaecol*. 2004;24:916-919.
13. Gallinat A. NovaSure impedance controlled system for endometrial ablation: three-year follow-up on 107 patients. *Am J Obstet Gynecol*. 2004;191(5):1585-1589.
14. Bourdrez P, Bongers MY, Mol BW. Treatment of dysfunctional uterine bleeding: patient preferences for endometrial ablation, a levonorgestrel-releasing uterine device, or hysterectomy. *Fertil Steril*. 2004;82:160-166.

Characteristics and Types of Dysfunctional Uterine Bleeding^{1,3,8}

Type of AUB	Characteristics	Medical T _x	Surgical T _x
Anovulatory	Occurs at extremes of reproductive ages No molar symptoms Irregular, unpredictable bleeding, sometimes excessive Underlying problems <ul style="list-style-type: none"> • Unopposed estrogen stimulation • Lack of progesterone priming of prostaglandins • Excessive vasodilating prostaglandins 	Cycle endometrium <ul style="list-style-type: none"> • OCs monthly • Cyclic progestin (last 12 cycle days) Suppress endometrium <ul style="list-style-type: none"> • DMPA • OCs • Danazol • GnRH agonists (leuprolide) • Progestin IUS Provide vasoconstrictive prostaglandins <ul style="list-style-type: none"> • NSAIDs starting first day of menses x 3 days 	Hysterectomy* Endometrial ablation† D&C is usually performed only to manage hemorrhage
Ovulatory	Occurs in peak reproductive years Bleeding predictable but excessive and prolonged Bleeding due to oversecretion of progesterone or imbalance in prostaglandins <ul style="list-style-type: none"> • Inadequate vasoconstrictive prostaglandins 	Suppress endometrium <ul style="list-style-type: none"> • OCs • DMPA • Danazol • GnRH agonists (leuprolide) • Progestin IUS Correct prostaglandin imbalances <ul style="list-style-type: none"> • NSAIDs starting first day of menses x 3 days 	Hysterectomy* Endometrial ablation† D&C is usually performed only to manage hemorrhage

*Results in infertility; †May cause infertility; only appropriate for women who have completed childbearing. D&C=dilatation and curettage; DMPA=depot medroxyprogesterone acetate; IUS=intrauterine system; OCs=oral contraceptives; NSAIDs=nonsteroidal anti-inflammatory agents