The ABC's of AUB

Togas Tulandi, MD, MHCM and Nadia Kabli MD
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What is AUB?

Abnormal uterine bleeding (AUB) is a common problem encountered in women. The most common cause of AUB in an adult female is:

- Intrauterine pathology (such as submucous myoma, endometrial polyp or adenomyosis). This is followed by systemic disorders (hypothyroidism, liver disease and chronic renal disease).

The most common cause of AUB in adolescents is

- Coagulation disorders (including platelet abnormality and Von Willebrand disease). Platelet abnormality and Von Willebrand disease are responsible for 5% to 24% of menorrhagia.[1]

When diagnosing AUB, it is important to remember that

- Genital tract atrophy and malignancy are predominant causes of AUB in post-menopausal women.[2,3]
- Rare causes of AUB are chronic endometritis and uterine arteriovenous malformation. Anovulatory bleeding is often found in peripubertal and perimenopausal age.
- Pregnancy-related bleeding should always be ruled out in all reproductive aged women.

Tiffany's Situation

- Tiffany, 19, presents to the clinic with a history of increasing menstrual bleeding, leading to anemia.
- This problem is interfering with her school and she is becoming increasingly weak.
- She was previously treated with oral contraceptive pills, but she developed deep venous thrombophlebitis in her left leg.
- Mefenamic acid resulted in modest improvement and the physical and ultrasound examinations were unremarkable.
- Tiffany's' coagulation profiles were normal.
- Levonorgestrel-norgestrel-releasing intrauterine device (IUD) was inserted. Tiffany's menstrual bleeding decreased, her anemia improved and she is presently amenorrheic.

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Tara's Problem

- Tara, 45, suffers from excessive menstrual bleeding, which has already required two blood transfusions.
- She has been advised to undergo a hysterectomy by her gynecologist.
- Ultrasound examination revealed multiple uterine fibroids with no intrauterine pathology.
- Tara underwent an endometrial biopsy. The results revealed secretory endometrium. She opted for uterine artery embolization. Her bleeding diminished markedly, but is still heavy.
- Eventually she underwent a laparoscopic hysterectomy.

What is the initial workup of patients with menorrhagia?

Initial assement of patients with AUB starts with a detailed history and physical examination. This detailed history should include a menstrual history (intermenstrual or post-coital bleeding), endocrine problems and any genital infection. Furthermore, it should include questions about drug use (including natural drugs). Basic hematology evaluation should include a complete blood cell count, serum ferritin, coagulation profiles (prothrombin time, partial thromboplastin, thyroid stimulating hormone and thyroid function test). In women with a history or a family history of a bleeding disorder, a Von Wille brand workup should be done. In reproductive-aged women, a pregnancy test should be given. Furthermore, in selected cases, liver and renal function tests should be evaluated.

When is a TVS necessary?

A transvaginal ultrasound (TVS) examination is needed to evaluate intrauterine pathology, such as endometrial polyp or submucous myoma. It is best performed in the early follicular phase, between day two and 10 of the menstrual cycle. A more accurate evaluation of uterine cavity can be obtained with a sonohysterography (saline infused sonography). A sonohysterography involves a TVS examination, while saline solution is instilled into the uterine cavity.

Dr. Nadia Kabli is a Fellow of Reproductive Endocrinology and Infertility at McGill University, Quebec.

Dr.Togas Tulandi is a Professor of Obstetrics and Gynecology and Milton Leong Chair in Reproductive Medicine at McGill University, Quebec.

When should you conduct an EB?

An endometrial biopsy (EB) is particularly important in women with high risk factors for endometrial cancer. These factors include chronic anovulation, polycystic ovarian syndrome , nulliparity, obesity, diabetes mellitus, perimenopausal, tamoxifen use, and thick endometrium (5 mm in early follicular phase or menopausal age). If endometrial sampling cannot be performed, a hysteroscopy examination and directed biopsy is the next diagnostic procedure. This has replaced the conventional dilatation and curettage.

Is an MRI ever necessary ?

MRI is rarely required. However, it is a good tool to distinguish uterine fibroid from adenomyosis.

When should a hysteroscopy be performed?

A hysteroscopy is recommended for women with an intrauterine lesion. It provides direct visualization of the endometrial cavity and removal of suspicious lesions. Women who have intrauterine structural lesions detected on initial evaluation should be offered the removal of the polyp or the sub mucous myoma. Women with no abnormality are candidates for trial medical therapy (Table 1).

Table 1

Medical management of abnormal uterine bleeding

Non-hormonal treatment:

- Non-steroidal anti-inflammatory drugs (NSAIDs) can be tried as the first line of treatment. The best NSAID for this purpose is mefenamic acid (500 mg three times daily); it decreases the amount of blood loss by approximately 30%. However, its use is limited by the gastro-intestinal side effects and its modest efficacy.
- Antifibrinolytic agent such as tranexamic acid (1 gram four times daily) reduces the amount of blood loss by 50%. Its use is usually well tolerated by the patients. Side effects of tranexamic acid include nausea, and vascular headache. Due to the possible risk of thrombosis, it should be used during the time of heavy bleeding and for a few days per cycle only.
- Mefenamic acid and tranexamic acid are the first line treatment in women with AUB.

Hormonal treatment:

- Danazol reduces menstrual flow but its androgenic side effects limit its use. Inadvertent use in pregnant women might result in masculinization of female fetus.
- Oral contraceptive pills (OCPs) or cyclic progestin (medroxy progestrerone acetate 10 mg daily) of 21 days is the classic management options. Administration of progestin is ineffective in the luteal phase.
- GnRH agonists are beneficial during the period of treatment. However, they are expensive and associated with hypoestrogenic side effects, mainly hot flashes.
- Levonorgestrel-releasing intrauterine device (IUD).[4] This progesterone-releasing IUDs reduced blood loss by 94% after 3 months of insertion. However, some women experienced irregular bleeding at 3-6 months and 42% of patients eventually required hysterectomy. In any event, this is a good management option particularly for women in reproductive age.

How do we manage patients with AUB?

- Hysteroscopic myomectomy or polypectomy is effective in women with submucous myoma or endometrial polyp.
- Myomectomy by laparoscopy or laparotomy is occasionally required in those with large intramural myoma with submucous component.
- Endometrial ablation (EA) can be considered for women who have failed medical therapy but with no plan for future pregnancy.[5] There are many techniques of endometrial ablation. In general, the results are similar. About 15% of patients may require further intervention either by repeat EA or hysterectomy. The hysterectomy rate at 31 months after EA is 9%.
- Hysterectomy is certainly the most effective method to treat AUB which can be performed by laparoscopy.
- Uterine artery embolization is an alternative to a hysterectomy in women with uterine fibroids.[6] However, it can also be offered to women without fibroids. It is particularly useful in those with a high surgical risk

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Take-home message

- An endometrial biopsy should be considered in women at risk for endometrial cancer.
- The management options for abnomal uterine bleeding depend on the patient's age, desire for future fertility and the underlying pathology.
- The first line of treatment in AUB is mefenamic acid, 500 mg three times daily or tranexamic acid, 1g once daily.
- Refer patients to a gynecologist if the have:
  - abnormal endometrium on histopathology,
  - intrauterine lesion or
  - intractable uterine bleeding

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