



# Improving Quality of Life: Dealing with AUB

David C. Cumming, MB, ChB, FRCOG, FRCSC

**A**bnormal bleeding is one of the four most common reasons to consult a family doctor and the commonest reason to consult a gynecological specialist. Only rarely does abnormal bleeding threaten life. Most causes are benign, but have a significant impact on one's quality of life. It is the fear of missing a malignancy that drives the investigation and treatment of abnormal uterine bleeding (AUB).

Evaluating AUB begins with a simple summary of the possible causes (Table 1). It is important to recognize that causes vary by age and pattern of menstruation (*e.g.*, teenagers rarely have malignancies and should be spared investigation, unless initial hormonal therapy fails). Endometrial abnormalities are found in anovulatory women, but are no more frequent in women with ovulatory bleeding (*i.e.*, menorrhagia) than in a non-symptomatic population. The ability to differentiate between ovulatory and anovulatory bleeding is important for appropriate diagnosis and treatment (Table 2).

### *Abnormal adolescent bleeding*

Unpredictable menstruation is common at the extremes of reproductive life. Teenagers usually begin normal menstruation after one year to two years of often unpredictable bleeding. Those who have irregular menstruation that lasts more than two years will likely have a lifelong problem, most commonly polycystic ovarian syndrome (PCO) or other causes of chronic anovulation. Teenagers with menorrhagia (ovulatory dysfunctional bleeding) have a high frequency of coagulation defects and need to be screened appropriately. Irregular bleeding is not caused by a coagulation defect.

## Selima's case

### Selima's prolonged, excessive menstruation

Selima, 13, had her first period at age 11. She has had perhaps five periods since that time. Her current period started four weeks ago and has been heavy at times. She did not want to see a doctor in case she had to be examined. However, bleeding was so heavy today that she fainted in school and was brought to her family doctor's office. At present, the flow has slowed and is not considered life-threatening.

### Physical examination

A physical exam reveals the following:

- Pulse rate: 88 bpm
- BP: 100/65 mmHg (but she looks pale)

Initial assessment suggests that the situation is not an emergency, but clearly may need some intervention.

### Laboratory tests

Laboratory tests reveal the following:

- Hemoglobin is low at 88 g/L, with other hematological variables in the expected ranges
- Ferritin is low

As Selima denied any sexual experience, no further examinations were investigated.

### Treatment

Selima is given a low-dose oral contraceptive pill (OCP) and ferrous gluconate. She is instructed to return to the ER if the bleeding is not controlled within three days.

Her mother later phones to say that all is well and she will follow up in three months.

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Malignancies are very rare in teenagers and failure to diagnose (*e.g.*, sarcoma botryoides) immediately on presentation is not a problem.

Table 1

**Causes of abnormal uterine bleeding**

Pregnancy	Organic	Dysfunctional
	<ul style="list-style-type: none"> <li>• Systemic</li> <li>• Local</li> </ul>	<ul style="list-style-type: none"> <li>• Ovulatory</li> <li>• Anovulatory</li> </ul>

Table 2

**Differentiating ovulatory and anovulatory bleeding**

**Ovulatory bleeding**

- Predictable cycle
- Predictable length (up to 10 days)
- May be heavy
- Cyclical molimina
- Dysmenorrhea
- Mastalgia
- Mid-cycle pain

**Anovulatory bleeding**

- Unpredictable cycle
- Unpredictable length
- Frequent unpredictable spotting
- Occasionally significant flow
- No cyclical molimina

Table 3

**Screening for coagulation disorders in menorrhagia**

**Initial testing**

- Complete blood count (CBC)
- Iron profile
- Serum creatinine
- Thyroid-stimulating hormone
- Prothrombin time
- Activated partial thromboplastin time
- Factor VIII level
- von Willebrand factor
- Ristocetin cofactor
- Platelet aggregation studies

**Additional hemostatic studies**

- Fact XI level
- Euglobin clot lysis time

*Investigation*

Investigation should include a complete blood count (CBC), including platelets, thyroid-stimulating hormone (TSH) and coagulation screen if the complaint is of menorrhagia (Table 3). If the young woman is sexually active, a Pap smear should be performed and cervical cultures and serum  $\beta$ -human chorionic gonadotropin should be investigated. One should be aware that sexual activity may be denied particularly in the presence of a parent. Initially, no other investigations are needed.

*Treatment*

To stop significant acute bleeding, one can use high-dose estrogens, such as a high-estrogen birth control pill (possibly q.i.d.) or oral or intravenous (IV) conjugated estrogens. The patient should be warned about nausea and vomiting. There is no evidence that, even in emergency situations, IV estrogen is more effective than oral conjugated estrogens. The patient should be transfused if the hemoglobin is  $< 70$  g/L with active bleeding and given iron if the hemoglobin is  $< 110$  g/L. It should be anticipated that 95% of patients respond to estrogen therapy, compared with 50% for gestagens only. If the bleeding is not controlled within 72 hours, or if the bleeding is life-threatening, examination under anesthesia and dilatation and curettage (D&C) should be arranged. Long-term management is usually achieved with an oral contraceptive pill (OCP), or perhaps cyclic gestagens for cycle control. It is important to be aware that complaints of period problems may represent a covert request for contraception and appropriate counselling may be needed.

Family doctors can manage the majority of problems and patients need to be referred only if bleeding is life-threatening, or does not stop with hormone therapy.

**Dr. Cumming** is a Professor of Obstetrics and Gynaecology and Director, Division of Reproductive Endocrinology, University of Alberta, Edmonton. He is also an Attending Staff Member, Royal Alexandra Hospital, Edmonton, Alberta.

## Managing menorrhagia

Menorrhagia (ovulatory dysfunctional bleeding) is defined as predictable, or prolonged, heavy bleeding. Assessment of regular vaginal blood loss is not easy. Menstrual histories and even prospective descriptive records are inaccurate. Several methods of assessment have been developed, but most are either impractical in the clinical setting or inaccurate (Table 4). Use of a pictorial blood loss assessment chart is probably the most accurate, clinically applicable method, if considered necessary.<sup>1</sup> Again, the possibility of coagulation defects should be considered. The etiology of menorrhagia is poorly understood, but probably involves changes in the prostaglandin control of hemostasis within the uterus. Abnormalities in circulating hormones and endometrial histopathology are therefore not found in menorrhagia. D&C would only be indicated to stop health or life-threatening acute bleeding. Ultrasound to identify large intramural or submucosal fibroids, endometrial polyps and adenomyosis is advisable. While fibroids and menorrhagia are both common in women in the fourth and fifth decades of life, fibroids may not be causal.

### Management

Long-term management can involve supportive, medical and/or surgical therapies. Supportive therapies involve reassurance and iron replacement. Effective medical therapies include:

- OCPs,
- non-steroidal anti-inflammatory drugs,
- low-dose luteal phase danazol,
- the antifibrinolytic tranexamic acid and
- a medicated intrauterine device containing levonorgestrel.

Ineffective treatments include ergot and medroxyprogesterone acetate (MPA) by mouth, unless used for 26 days per month. Depot-MPA can also be

## Janine's case

### Janine's regular, heavy periods

Janine, 40, makes an appointment with her GP with complaints of regular, heavy periods seven days long, since she discontinued the OCP 10 years ago when her tubes were tied.

Janine is a non-smoker whose current period is very heavy. Examination confirms a heavy flow with clots in the vagina. The uterus is slightly bulky and anteverted. There are no adnexal masses.

### Investigations

- Hemoglobin 118 g/L with no other abnormal hematological variables
- A coagulation screen and thyroid-stimulating hormone are normal. No other endocrine investigations are performed. It is felt that urgent surgical treatment is not necessary
- Pelvic ultrasound, including a transvaginal ultrasound, is normal

Since the bleeding is regular, it is not considered necessary to do an endometrial biopsy with hysteroscopy. There is discussion of estimates of menstrual blood loss and the patient agrees to a pictorial record of her next period. This is later found to be abnormal.

### Treatment options

Treatment options are discussed. OCPs are rejected because she "does not want to go back to that." Other medical methods are rejected because she does not want the pills for the next 10 years to 15 years. A consultation is obtained with a gynecologist who arranges for endometrial ablation. This controls her problem, although it does not completely remove her periods. Two years after ablation, at her annual physical, Janine's hemoglobin is 135 g/L and she is happy with the result.

**For another case, turn to page 78.**

used, but may convert heavy, regular bleeding into irregular bleeding. To stop or reduce heavy periods, surgical therapies such as hysterectomy and endometrial ablation are effective. D&C is not

Table 4

**Methods of estimating menstrual blood loss**

Method	Validity	Reliability	Applicability	Feasibility
Menstrual recall	Low	Low	Extremely high	Extremely high
Menstrual record	Low	Low	High	High
Alkaline haematin	Extremely high	Extremely high	High	High
PBAC	Moderate	Moderate	High	High
Menstrual pictogram	Moderate	Moderate	High	High
Gynaeseal	Extremely low	Extremely low	High	Extremely low
WML	High	High	High	Extremely low

PBAC: Pictorial blood loss assessment chart  
 WML: Weighed menstrual loss

effective other than to stop acute hemorrhage. Despite the effectiveness of medical therapy, the majority of patients prefer a surgical solution.<sup>2</sup> Management of fibroids is beyond the scope of this brief review, but may involve medical therapies similar to those of:

- menorrhagia,
- myomectomy,
- embolization, or
- hysterectomy.

*Investigation and management*

The investigation and medical management of menorrhagia is within the capability of family doctors. Patients only need to be referred for specialist evaluation in the event of needing surgical management.

*PCO*

PCO is a clinical syndrome that may have multiple origins ending in the common expression of irregular, often anovulatory bleeding with or without:

- obesity,
- hirsutism,
- multicystic ovaries,
- hyperinsulinemia,
- biochemical and physical hyperandrogenism and
- infertility.

*Investigation*

Investigation should include a CBC and hormonal investigation. A hormonal investigation can be inconsistent, but could include measurement of:

- serum luteinizing hormone (SLH),
- follicular stimulating hormone (FSH),
- testosterone,
- sex hormone binding globulin,
- fasting insulin and glucose,
- prolactin,
- TSH and
- 17 hydroxy-progesterone levels.

One might also consider evaluation of lipids that are frequently abnormal as well. Endometrial biopsy should be carried out if the patient:

- is > 35-years-of-age,
- has had episodes of anovulatory bleeding for > 12 months, or
- has thickened endometrium in transvaginal ultrasound.

Fibroids may be found on ultrasound, but they are not the primary problem.

*Management*

To stop significant acute bleeding, high-dose estrogen or estrogen/gestagen regimens are effective in 95% of patients. Gestagens only are effective in 50%, since the endometrium, although already estrogen-primed, needs

exogenous estrogen to heal. D&C might be needed to stop bleeding if severe and if medical therapy fails in 48 hours to 72 hours.

Long-term management is goal-oriented and may include:

- cycle control,
- preservation of fertility,
- ovulation induction,
- weight control and
- hirsutism.

It would also be important to consider the prevention of hyperplasia/malignancy, control of abnormal lipids and lifestyle change to reduce the chance of diabetes. Hysterectomy is also an option. It is unclear whether removal of the ovaries is beneficial or not in patients with PCO. Endometrial ablation is possible, but the risk of endometrial cancer or hyperplasia remains. Most of the management of PCO can remain in the FP's hands, unless fertility problems or surgical necessity determines otherwise.

### *AUB in premenopausal women*

About 85% of women have menstrual irregularity prior to menopause and 15% are sufficiently symptomatic to seek treatment. The etiology is declining ovarian responsiveness leading to irregular hormone production. Evaluation should include a CBC and endometrial sampling. FSH levels are often done, but may be misleading as they can often be normal. Transvaginal ultrasound should be considered, but fibroids are not the primary cause and may worsen the anovulatory bleeding. If an endometrial lesion is suspected, hysteroscopy and directed biopsy are recommended over D&C. However, D&C may be needed to stop acute bleeding. Medical therapy to stop acute bleeding could include OCPs or estrogen followed by cyclic gestagens. Surgery, to reduce the need for prolonged use of medication, remains common in this group of women. The problem is self-limiting and can be managed without

## Regina's case

### **Regina's longstanding, unpredictable, heavy bleeding**

Regina, 35, has never had regular menses since she was a teenager. Currently, she has had painless vaginal bleeding for six weeks and over the last three years, has had several similar episodes. She needed clomiphene for her two pregnancies. In the second pregnancy she developed gestational diabetes mellitus. She takes iron regularly because she becomes anemic if she stops.

### **History and exam**

- Body mass index (BMI) is 35
- She has had facial hair treated by laser therapy
- Pelvic examination is difficult because of the high BMI, but an endometrial biopsy is obtained in the office
- Hemoglobin and other hematological variables are normal
- Random blood glucose is considered abnormal but not diagnostic of diabetes
- A two-hour glucose tolerance test is considered diagnostic of diabetes mellitus. (During her attempts to conceive before her second pregnancy, glucose had been found to be normal but insulin was elevated)
- The endometrial biopsy is reported as "complex with atypia." For this reason Regina expresses a wish to have a total abdominal hysterectomy and bilateral salpingo-oophorectomy. Following surgery she is treated with low-dose estrogen therapy

**For another case, look to page 79.**

medication or surgery. Again, medical therapy and office biopsies are within the capability of FPs.

### *When to refer*

Research in the United Kingdom has demonstrated that FPs, provided with the appropriate knowledge and tools, can reduce the frequency of surgery in menorrhagia. All medical therapies and sometimes surgery is

## Juliana's case

### Juliana's recent onset of heavy, unpredictable bleeding

Juliana, 48, has never had any problems with her periods. She had three children and her husband had a vasectomy. There are no current health problems and no significant past history. She began getting hot flashes in the second-half of her cycle some months ago, but was determined to ignore them. Her last six periods have arrived earlier or later than expected, but her most recent period started six weeks later than expected and bled through her clothing. She is a non-smoker.

Juliana wants to be sure that there is no cancer.

### Clinical findings

- Pelvic examination reveals a subserous fibroid on the posterior aspect of the uterus. By now, the bleeding has subsided
- An endometrial biopsy is obtained (proliferative endometrium)
- CBC reveals mild anemia compatible with iron deficiency
- Ultrasound confirms a single posterior 3 cm subserous fibroid

### Treatment options

When offered the option to take a low-dose OCP to control the bleeding, Juliana declines. She accepts a prescription for iron and wants to think about the possibility of surgery. Although she focuses on the fibroid as the cause for the bleeding, she comes to understand that it is probably an incidental finding. She is reassured that there is no cancer. Her next period is a little late but reasonably normal in flow and duration.

After another episode of bleeding through her clothing, Juliana asks to be scheduled for surgery. The waiting time is four months and during this time, she has no further periods. She cancels the surgery and declines new offers of hormone therapy for her flashes and night sweats.

within the scope of FPs. Endometrial biopsy is a simple, safe office procedure that does not require referral. Ultrasound for fibroids, polyps and endometrial thickness is widely available (but endometrial thickness may

need to be specifically asked for). Saline infusion ultrasonography is generally a specialist requirement.

The patient should be referred:

- for the management of life-threatening bleeding,
- when there is an inability to do appropriate investigations in a reasonable amount of time,
- for surgery if there are no facilities or if proper care/treatment is beyond the capability of the physician,
- for malignancy (always), or
- if it is unclear how to proceed.

Most issues related to AUB are quality of life ones.

The patient decides when enough is enough. 

### References

1. Higham J, O'Brien PMS, Shaw RW: Assessment of menstrual blood loss using a pictorial chart. *Br J Obstet Gynaecol* 1990; 97(8):734-9.
2. Winsor SHM, Fisher S, Hahn PM, et al: Retrospective evaluation of the long-term outcomes following conservative management of menorrhagia in ovulatory women. *Journal of SOGC* 1999; 21(2):12-5.

### Resources

1. Scully FM, Barrett B, Walsh M: An evaluation of existing measurement methods in assessing menstrual blood loss in women with hereditary bleeding disorders. Abstract CD025. *J Thromb Haemost* 2003; 1(suppl 1): Abstract CD025.
2. Kouides PA: Menorrhagia from a hematologist's point of view. Part 1. The initial evaluation. *Haemophilia* 2002; 8(2):330-8.