Heavy menstrual bleeding

Rashda Bano
Shreelata Datta
Tahir A Mahmood

Abstract

Heavy menstrual bleeding is defined as excessive menstrual blood loss which interferes with the woman's physical, emotional, social and material quality of life, and which can occur alone or in combination with other symptoms. All interventions should aim to improve quality of life rather than focussing on menstrual blood loss alone. An accurate history may indicate the cause of the bleeding. Indications for endometrial biopsy include persistent intermenstrual bleeding as well as heavy menstrual bleeding, in women aged 45 and over and those where there is evidence of treatment failure. First line treatment includes tranexamic acid or non-steroidal anti-inflammatory drugs or combined oral contraceptives.

Second line treatment options include, levonorgestrel-releasing intra-uterine system (provided long-term use is anticipated), oral norethisterone or injectable long-acting progestogens.

In women with HMB alone who have failed to respond to the above treatment options: with uterus no bigger than a 10-week pregnancy, endometrial ablation should be considered in preference to hysterectomy. Where hysterectomy is indicated, the route of hysterectomy should be considered in the following order: first-line vaginal; second-line abdominal/laparoscopic.

Keywords abnormal uterine bleeding; endometrial ablation; heavy menstrual bleeding; hormonal treatment; hysterectomy; long acting injectable progestogens

Introduction

Heavy menstrual bleeding (HMB) is defined as excessive menstrual blood loss which interferes with a woman's physical, social, emotional and/or material quality of life. It can occur alone or in combination with other symptoms. The term heavy menstrual bleeding has replaced the term menorrhagia. The objective definition of HMB is no longer used except for research purposes.

Rashda Bano *MRCOG is a Specialist Registrar in Obstetrics and Gynaecology at Victoria Hospital, Kirkcaldy, Scotland. Conflicts of interest: none declared.*

Shreelata Datta *MRCOG LLM is a Locum Consultant Obstetrician & Gynaecologist at St Helier's Hospital, Carshalton, Surrey, UK. Conflicts of interest: none declared.*

Tahir A Mahmood *MD FRCOG FRCPI MBA FACOG is a Consultant Obstetrician and Gynaecologist at Victoria Hospital, Kirkcaldy, Scotland. Conflicts of interest: none declared.*

Prevalence

Between 4% and 51% of women experience HMB depending on their country of origin and clinical settings where data had been collected. Heavy menstrual bleeding affects one in three women of reproductive age. In the UK, almost 1.5 million women per year consult their GP with menstrual complaints and the annual treatment cost exceeds £65 m.

Causes of heavy menstrual bleeding

Fibroids, polyps, coagulopathy, endometrial/cervical malignancy, thyroid disease, pelvic infection especially by Chlamydia, and arteriovenous malformations are the possible causes of HMB. Iatrogenic causes include use of anticoagulants etc.

Submucosal and intramural fibroids are particularly associated with HMB, although about 50% of fibroids cause no symptoms. Coagulopathy should be considered in women who fail to respond to medical management or women who present at a young age. Coagulopathy may be inherited or acquired and most common inherited disorder is von Willebrand's disease. Endometrial and cervical carcinomas are potential causes of intermenstrual and post coital bleeding and rarely HMB. Untreated hypothyroidism may be associated with HMB. Chronic endometrial infection may cause intermenstrual bleeding or HMB. Chlamydia trachomatis has been proposed as a cause of HMB.

Arteriovenous malformations (AVM) in the uterus may be congenital or acquired and are a rare cause of HMB. Acquired AVM may occur following uterine curettage after pregnancy. Colour Doppler imaging is a useful diagnostic modality if AVM malformation is suspected. Acute heavy bleeding from an AVM may be required to be managed with uterine artery embolization.

Iatrogenic causes include the use of anticoagulants in women with thromboembolic disease and copper IUD. Table 1 summarises the main causes of HMB.

Obesity and HMB

Obesity is associated with abnormal uterine bleeding. There is clear association between obesity, endometrial polyps, endometrial hyperplasia and ovulatory dysfunction. As PCOs are associated with obesity and obesity augments its development, many of the effects of obesity on menstrual disorders are manifested through PCOs. A survey of pre-menopausal women with endometrial polyps found that 82% reported abnormal uterine bleeding. In obese women particularly in combination with hypertension, there is an increase risk for polyp development. In addition, in infertility patients, Body Mass Index (BMI) was an independent risk factor for the development of endometrial polyps. Obese women would therefore appear to be at an increased risk of developing endometrial polyps although the basis for this is not known. Obesity also increases the risk of malignancy developing within an endometrial polyp. In one study it is reported that 86% of women with complex hyperplasia were obese. Histological examination of pre-menopausal endometrial biopsies found that women with hyperplasia had a significantly higher BMI than those without hyperplasia. In another study the median BMI in the hyperplastic group was 38 kg/m^2 compared with 30 kg/m^2 in the non-hyperplastic group.

Summary of causes of HMB

Classification	Subtype
Local uterine pathology	Uterine fibroids
	Uterine polyps
	Chronic endometrial infection
	Uterine cancer
	Endometrial hyperplasia
	Arteriovenous malformation
Local pelvic pathology	Polycystic ovaries (PCOs)
Systemic disorders	Hypothyroidism
	Coagulopathy e.g. Von Willebrand's disease
Iatrogenic causes	Anticoagulation therapy
	IUCD

Table 1

Women with complex endometrial hyperplasia are more frequently obese. In addition, BMI is predictive of endometrial thickness on an ultrasound scan and this is predictive of hyperplasia. Obese women are thus at increased risk of developing endometrial hyperplasia.

A raised BMI is associated with earlier menarche and menstrual irregularities during adolescence. A raised BMI will certainly impact on endometrial function in the context of an increased risk of endometrial hyperplasia and endometrial carcinoma. Raised circulating oestrogen levels, as a consequence of peripheral conversion of androgens by adipose tissue aromatase, enzyme have been implicated in the increased proliferative activity of endometrial cells. Circulating adipokines have also been associated with increased angiogenesis as well as cell proliferation. HMB is a common complaint among those women who are premenopausal and who are subsequently diagnosed with endometrial cancer. It would therefore not be unlikely if a raised BMI was found to impact on the volume of menstrual blood loss.

Bleeding of endometrial origin

In the majority of cases of HMB, the precise cause of heavy bleeding lies at level of the endometrium. This was previously termed as DUB or dysfunctional uterine bleeding and it is a diagnosis of exclusion.

History, examination and investigations for HMB

A history should be taken from the woman that should cover the nature of bleeding and related symptoms that might suggest structural or histological abnormality, impact on the quality of life and other factors that may determine treatment options (such as presence of co morbidity). The range and natural variability in menstrual cycles and blood loss should be taken into account when diagnosing HMB. A menstrual diary is often helpful to determine the amount and timing of the bleeding. Flooding and clots indicate significant loss. Inter menstrual and post coital bleeding are suggestive of an anatomical cause, whereas pressure symptoms, including bowel and urinary symptoms, can indicate the presence of a large fibroid. A coagulation disorder may be suggested by history of excessive bleeding since menarche, postpartum haemorrhage, surgery related bleeding, or a history of two or more of following: bruising greater than 5 cm, epistaxis once a month, frequent bleeding or a family history of bleeding disorders.

According to NICE guideline, If the history suggests *HMB with structural or histological abnormality*, with symptoms such as intermenstrual or post coital bleeding, pelvic pain and /or pressure symptoms, a physical examination and/or other investigations (such as ultrasound) should be performed.

If the history suggests HMB without structural or histological abnormality, pharmaceutical treatment can be started without carrying out a physical examination or other investigations at initial consultation at primary care unless treatment chosen is LNG-IUS.

Measuring menstrual blood loss either directly (alkaline haematin) or indirectly ('Pictorial blood loss assessment chart') is not routinely recommended for HMB.

Examination

A general physical examination should be performed to exclude signs of anaemia, evidence of systemic coagulopathy and thyroid disease.

An abdominal examination should be performed to exclude a pelvic mass especially if there is a history of pressure symptoms (fibroid or ovarian enlargement); a speculum examination should be performed to assess vulva, vagina and cervix (this may reveal sources of bleeding, such as a tumour, polyp or a discharge suggesting infection). A bimanual examination should be performed to elicit uterine enlargement.

A physical examination should be carried out before

- All LNG-IUS fittings.
- All investigations for structural abnormalities
- All investigations for histological abnormalities.

Women with fibroids that are palpable abdominally or who have Intracavity fibroids and/or whose uterine length as measured at ultrasound or hysteroscopy is greater than 12 cm would require further assessment in a hospital setting.

Investigations (Table 2)

Laboratory tests

A full blood count test should be carried out on all women with HMB. This should be done in parallel with any HMB treatment offered. Testing for coagulation disorders (for example, von Willebrand's disease) should be considered in women who have had HMB since menarche and have personal or family history suggesting a coagulation disorder. A serum ferritin test, LH, FSH should not routinely be carried out on women with HMB. Thyroid testing should be carried out only when other signs and symptoms of thyroid disease are present.

Endometrial biopsy

Dilatation and Curettage should not be used at all in the management of HMB.

If appropriate, a biopsy should be taken to exclude endometrial cancer or atypical hyperplasia. Indications for a biopsy include, for example, persistent intermenstrual bleeding, and in women aged 45 and over treatment failure or ineffective