Menorrhagia

Menorrhagia is menstrual blood loss which interferes with a woman's physical, emotional, social, and material quality of life, and which can occur alone or in combination with other symptoms. Any intervention should aim to improve her quality of life. Research studies usually take menorrhagia to be a monthly menstrual blood loss in excess of 80 ml.

What is normal?

The average menstrual cycle has a blood loss for 7 days of a cycle of between 21 and 35 days. The usual shorthand for this is:

\[ K = \frac{7}{21-35} \]

in which \( K \) represents menstrual cycle, 7 is the duration of bleeding and 21-35 represents the length of the cycle.

Menstrual loss is heaviest for the first few days and becomes much lighter, tailing off towards the end.

Other definitions include:

- Metrorrhagia - flow at irregular intervals.
- Menometrorrhagia - frequent and excessive flow.
- Polymenorrhoea - bleeding at intervals of less than 21 days.
- Dysfunctional uterine bleeding - abnormal uterine bleeding without any obvious structural or systemic pathology.
- Dysmenorrhoea - pain with menstruation.

The average menstrual blood loss is about 35-40 ml. Some researchers have found that no more than 10% of women who complain of heavy menstruation have blood loss in excess of 80 ml. Menorrhagia is very subjective; a more practical definition may be that it is menstrual loss that is greater than the woman feels she can reasonably manage. The National Institute for Health and Clinical Excellence (NICE) defines heavy menstrual loss as excessive blood loss that interferes with a woman's physical, social, emotional and/or quality of life.[1]

Menorrhagia is related to increased limitations in physical activities and limitations in social and leisure activities.[2]

Epidemiology

Menorrhagia is a very common complaint:

- 33% of women describe their periods as heavy.
- 1 in 20 women aged 30 to 49 years consult their GP each year for heavy periods and menstrual disorders.[3]
- It is the second most common gynaecological condition to be referred to hospital, accounting for around 12% of all gynaecological referrals.[1]

Aetiology

- 40-60% of those who complain of excessive bleeding have no pathology and this is called dysfunctional uterine bleeding.
- 20% of cases are associated with anovulatory cycles and these are most common at the extremes of reproductive life.
Local causes include:
- Fibroids.
- Endometrial polyps.
- Adenomyosis.
- Endometritis.
- Endometrial hyperplasia.
- Pelvic inflammatory disease.
- Carcinoma, especially endometrial carcinoma in women aged over 40; this usually presents with postmenopausal bleeding, but 20-25% of cases present with abnormalities of the menstrual cycle.

Systemic disease can include hypothyroidism, liver or kidney failure and bleeding disorders.
- An intrauterine contraceptive device (IUCD) can increase menstrual flow.

Presentation

See separate article Gynaecological History and Examination.

- Note the total duration of bleeding and how much of that time it is heavy. Over 90% of menstrual loss occurs in the first 3 days and there is no correlation with the duration of loss and the total volume.
- Note the length of the cycle, ie the duration from the start of one period to the start of the next.
- If the patient has to wear tampons and towels simultaneously, flow is heavy.
- The passage of clots represents heavy flow. Clots may be painful as they pass through the cervix.
- Ask about other associated menstrual problems - for example, premenstrual syndrome, intermenstrual bleeding (IMB), postcoital bleeding (PCB), dyspareunia and pelvic pain.
- Ask about intentions with regard to further children, as this may affect management.
- Ask about any symptoms to suggest anaemia.
- Ascertain the effect on personal life, including any time off work.
- Ask about past medical problems, including clotting disorders, thyroid status and gynaecological history.
- Ask about easy bruising or bleeding gums.

Examination

Clinical examination should be undertaken to assess for any anaemia and also to rule out potential organic causes of menorrhagia.

- Note general appearance and BMI. Body fat is very important in relation to metabolism of steroid hormones.
- Note any signs suggestive of endocrine abnormality or bruising.
- Look at the tongue for pallor and the nails for koilonychia.
- Examination of the abdomen always precedes pelvic examination; otherwise, large pelvic masses can be missed.
- Ascertain that the cervical smear is up-to-date.
- Inspect the cervix and take swabs if clinically indicated.
- Perform a bimanual examination. Abnormalities may include a bulky or grossly enlarged uterus, fixation of the uterus or tenderness.

Investigations

- Women can be asked to complete a pictorial representation to assess the volume of blood loss.
- FBC is important. The most common cause of iron deficiency anaemia in women is menorrhagia.
- Tests for endocrine abnormalities, including TFTs should be performed only if there is clinical suspicion.
- Assessment of bleeding disorders is only indicated if there is clinical suspicion.

If appropriate, you should refer the patient for a biopsy to exclude endometrial cancer or atypical hyperplasia. Indications for a biopsy include:

- Persistent intermenstrual bleeding which has not improved with medical management.
- Age ≥45.
Women with a history to suggest endometrial pathology.
Women with risk factors for endometrial cancer or hyperplasia.

Ultrasound (ideally transvaginal) is the first-line diagnostic tool for identifying structural abnormalities - eg, fibroids. An endometrial thickness of <12 mm is normal in premenopausal women. In addition, a hysteroscopic assessment of the endometrial cavity may be undertaken.

Management

Not everyone needs referral to secondary care. Medical treatment can be instituted in primary care. Patients are referred to exclude sinister pathology and when treatment in primary care has failed.

- The main aims of treatment are to improve symptoms and also quality of life.
- Women should be advised on advantages and disadvantages of treatments and should also receive written information.
- If history and FBC are reassuring, then drug treatment should be considered if required. All drug treatments preserve fertility.
- If history is persistent IMB, or the patient is 45 years or over and medical treatments have failed, refer for endometrial biopsy.
- If the uterus is palpable per abdomen, or there is a pelvic mass, refer for ultrasound.

Pharmacological

When a first pharmaceutical treatment has proved ineffective then a second pharmaceutical treatment should be considered rather than immediate referral to surgery.

- If there is iron deficiency it should be corrected with oral iron.
- First-line treatment is the levonorgestrel intrauterine system - Mirena®. This is long-term treatment and should be left in situ for at least 12 months. One recent study has shown that women with menorrhagia reported more improvement in bleeding and quality of life with the levonorgestrel releasing intrauterine system than with other treatments available in primary care. In addition, they were more likely to continue with this treatment. However, the rate of discontinuation of Mirena® treatment has been shown to be relatively high - 16% at 12 months and 28% by 2 years. If this is unacceptable to the patient then consider tranexamic acid, mefenamic acid or the combined oral contraceptive pill (COCP):
  - Mefenamic acid works by inhibiting prostaglandin synthesis. It reduces menstrual loss by around 25% in three quarters of women and is better tolerated than tranexamic acid.
  - Tranexamic acid is a plasminogen-activator inhibitor. It inhibits the dissolution of thrombosis that leads to menstrual flow. It can reduce flow by up to 50%. It is most effective at reducing menstrual loss associated with IUCDs, fibroids and bleeding diathesis. Other non-steroidal anti-inflammatory drugs (NSAIDs) may also be used. Side-effects include nausea, vomiting and diarrhoea. If there is disturbance in colour vision then it should be discontinued.
  - The COCP suppresses production of gonadotrophins and reduces menstrual blood loss by around 50%. It can improve dysmenorrhoea, lighten periods, regulate the cycle, improve premenstrual symptoms, reduce the risk of pelvic inflammatory disease and protect the ovaries and endometrium against cancer.

- Norethisterone is third-line therapy. Dose is 15 mg tds, from day 5 to 26 (or injected long-acting progestogens). This can result in a significant reduction in menstrual blood loss, although women tend to find the treatment less acceptable than intrauterine levonorgestrel. This regimen of progestogen may have a role in the short-term treatment of menorrhagia.

- However, there are very limited data regarding the use of progestogens and of oestrogens and progestogens in combination in the treatment of irregular menstrual bleeding associated with anovulation. There is still no consensus about which regimens are the most effective. Consider 3-4 months of a gonadotrophin-releasing hormone (GnRH) analogue before hysterectomy or myomectomy where the uterus is enlarged or distorted by fibroids. It is also a reasonable choice of therapy if other methods are contra-indicated - but ‘add-back’ hormone therapy will be needed if continued for >6 months.
Surgical options
The choice of treatment will depend on both the uterine size and the patient's desire to retain her uterus.

- Endometrial ablation is the recommended first-line treatment if the uterus is <10 weeks of gestation on palpation. This involves removing the full thickness of the endometrium together with the superficial myometrium, and the basal glands thought to be the focus of endometrial growth. It retains the uterus.
- Endometrial ablation is contra-indicated in women with large fibroids or suspected malignancy and in those who have not completed their family.
- If the uterus is >10-week size, and the woman wishes to retain her uterus, treatment options are uterine artery embolisation or hysteroscopic myomectomy.
- If the patient does not wish to retain the uterus, then hysterectomy - first consider vaginal, then abdominal with conservation of ovaries, if appropriate.

Further reading & references

- Menorrhagia; NICE CKS, August 2012

1. Heavy menstrual bleeding; NICE Clinical Guideline (January 2007)

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