

# MENORRHAGIA – AN OVERVIEW

Johnstone Miheso, MB, ChB

**Dr Johnstone Miheso, senior house officer at the Royal Lancaster Infirmary (RLI) describes the commonest cause of iron deficiency in the western world.**

## INTRODUCTION

Menorrhagia refers to a complaint of excessive cyclical menstrual loss occurring over several consecutive cycles in the reproductive years of a woman's life. It is defined objectively as menstrual flow of over 80 millilitres per cycle. In clinical practice it is entirely based on a woman's subjective assessment of her menstrual loss over several cycles. The presence of intermenstrual and postcoital bleeding has to be excluded in this definition.

Heavy menstrual loss has an enormous implication on the quality of life of a woman. Disruption of social activities, work, holidays and hobbies results in anxiety, embarrassment, disturbances in sexual life and even depression. There is also morbidity arising from menorrhagia and hospitalisation and blood transfusion are not uncommon.

## INCIDENCE AND SIGNIFICANCE

In the United Kingdom (UK), 1 in 20 women aged 30 to 49 consults a general practitioner (GP) every year with menorrhagia<sup>(1)</sup>. Overall, 5% of women in the UK in their reproductive years will seek help for this symptom annually<sup>(2)</sup> and by the end of the reproductive years the risk of hysterectomy (primarily for menstrual disorders) is 20%<sup>(3)</sup>.

Population studies have shown that only 10% of women have menstrual loss of over 80mls whereas nearly a third of women consider their menstruation excessive<sup>(4)</sup>. This obviously creates a significant workload for health services.

## CAUSES

Menorrhagia is associated with both ovulatory and anovulatory cycles. Both can give rise to excessive menstrual loss in the absence of any other abnormalities (dysfunctional uterine bleeding). Some disorders associated with excessive menstrual bleeding include fibroids, adenomyosis, precancerous conditions, polyps, infections and haematological disorders.

Endocrine disorders do not usually cause menorrhagia except as endocrine consequences of anovulation. Equally, only in selected populations, haemostatic disorders are a rare cause of menorrhagia despite suggestion to the contrary. Laboratory studies have shown several abnormalities in the endometrium of women with menorrhagia. The increased fibrinolytic activity and increased production of prostaglandins<sup>(5)</sup> providing the rationale for treatment.

In the western world, menorrhagia is the commonest cause of iron deficiency anaemia and low haemoglobin may objectively predict heavy menstrual loss<sup>(6)</sup>.

## INVESTIGATIONS

In general practice it is imperative to obtain a thorough gynaecological history. There should be evidence of regular and heavy cyclical menstruation over several cycles. This should be followed with a general and abdominopelvic examination.

Attempts at estimation of blood loss have been done using the pictorial blood loss assessment charts (PBACs), which measure the degree of staining of pads as well as the number of pads used. The gold standard remains the use of haematin technique, which requires a woman to collect the sanitary pads she uses for measurement. However, these are of limited clinical use.

Investigations need to be started at first point of contact in general practice. These should be aimed at assessing the morbidity associated with excessive loss, define any disease process affecting the uterus or related structures and assess co-existing diseases.

A full blood count is undertaken to evaluate the haemoglobin level and also show other parameters that may indicate intercurrent disease. Other tests that may be done in individualised cases include a coagulation screen, thyroid function tests and other endocrinological screening<sup>(7,8)</sup> and ultrasound. Endometrial sampling plays no role in initial management of menorrhagia and is only employed in conjunction with further assessments of the endometrial cavity like hysteroscopy.

## TREATMENT

The aim of treatment is to decrease the amount of blood loss and also improve the quality of life.

Treatment may be medical or surgical, the choice of which is influenced by need for contraception, patient preference (eg desire to avoid hormonal treatment) and any contraindication to treatment.

Medical treatment involves the use of antifibrinolytic tranexamic acid, non-steroidal anti-inflammatory mefenamic acid, oral contraception and levonorgestrel intrauterine system, whereas surgical treatment ranges from endometrial resection, endometrial ablation and ultimately hysterectomy.

The patient should be involved in the treatment choice and provided with written and oral information. There is improved patient satisfaction and improved outcomes in both medical and surgical treatments if patients participate in their own care. For many women the cycle control is as important as is the degree of menorrhagia.

### Medical treatment

The first line of treatment of menorrhagia is the use of antifibrinolytic tranexamic acid and non-steroidal anti-inflammatory mefenamic acid. Tranexamic acid reduces the

menstrual flow by one half to one third. Both have the advantage of being taken during menstruation itself and this increases compliance. They are useful in patients who do not require contraceptive treatment.

Combined contraceptive pills are both effective as contraception and for menorrhagia, especially for anovulatory cycles as they impose a cycle. A 53% reduction in menstrual loss was reported in one randomised control trial<sup>(9)</sup>.

Mirena coil (LNg20-IUD) is loaded with levonorgestrel that is released at the rate of 20 micrograms daily which acts locally, minimising systemic progesterone side effects. It induces atrophy, with reduction in menstrual loss in more than 80% in three to six months and more than 90% in 12 months<sup>(9,10,11)</sup>. Patients may experience break through bleeding up to 25-55% in the first few months. Compliance can be enhanced by pre-treatment counselling. This intrauterine contraception device (IUCD) is advocated as an alternative to surgery.

Second line drug treatment comprises of androgens (danazol, gestrinone) and gonadotrophin-releasing hormone analogues which are effective but their use is limited by their side effect profile. Danazol, a 17 $\alpha$ -ethinyl testosterone, inhibits ovulation and causes low circulating estrogen levels and endometrial atrophy. It is licensed for use for menorrhagia.

### Surgical Treatment

There are many modalities of surgical treatment. These are used when the medical treatment fails or when there are specific indications for them. The options range from hysterectomy to endometrial resection and endometrial ablative techniques.

Hysterectomy is considered in older women who have completed their family. It is the only procedure which

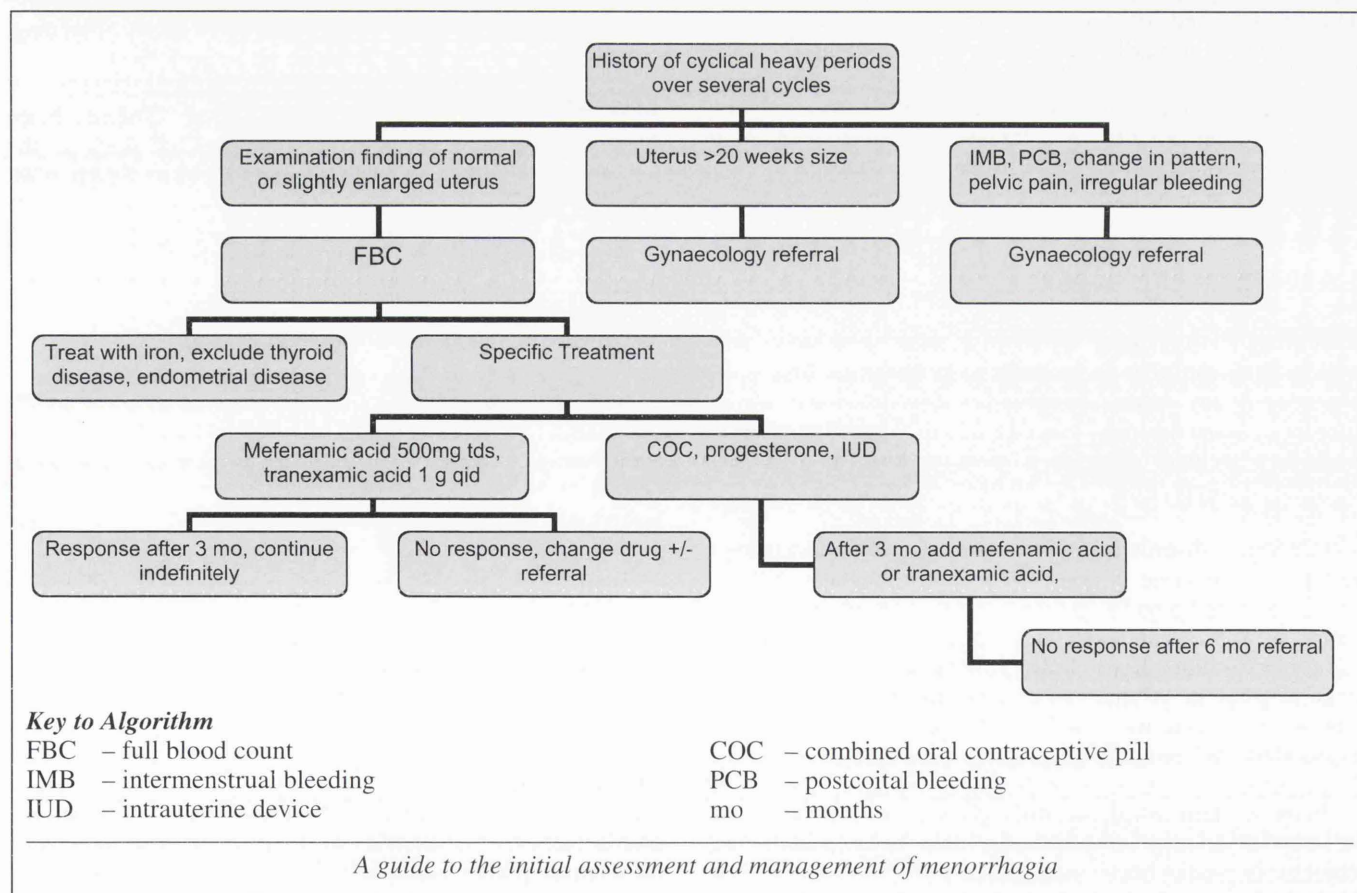
guarantees complete amenorrhea. It is associated with surgical and anaesthetic risks. Approximately 1 in 30 women suffer an adverse event during or soon after an operation and a mortality rate of 0.4-1.1 per 1000 operations has been described. There are cost implications with increased hospital stay.

Endometrial ablative procedures were introduced 20 years ago. The aim is to completely destroy the endometrium to the basal layer resulting in fibrosis of uterine cavity and amenorrhea. They employ thermal, electrical or laser energy. Efforts must be made to exclude organic or structural causes and they are not suitable for women wishing to preserve fertility. Obvious advantages include reduced hospital stay, less analgesia, shorter recovery and return to work periods.

First generation endometrial ablative techniques are transcervical resection of the endometrium (TCRE), loop diathermy electrode and roller ball ablation. They all require direct vision hysteroscopy and success rate depends on the skills of the operator. Common complications include electrosurgical burns, uterine perforation, haemorrhage, fluid overload and infections. The MISTLETOE (minimally invasive surgical techniques, laser endothermal or endoresection) study reported a complication rate of 6.6 per 1000 procedures<sup>(12)</sup>.

Second generation ablative procedures were introduced with the aim of providing simple and more effective treatments which are less operator dependent. They include thermal balloon endometrial ablation (TBEA), radio-frequency (thermoregulated) balloon endometrial ablation, 3D bipolar radiofrequency endometrial ablation, hydrothermal endometrial ablation, microwave endometrial ablation, diode laser hyperthermy, cryoablation and photodynamic therapy.

The National Institute for Clinical Excellence (NICE) guidelines<sup>(13)</sup> recommend thermal balloon ablation and



microendometrial ablation as treatment alternatives to surgery for menorrhagia. In Morecambe Bay Health Trust thermal balloon ablation is done using the Gynecare Thermachoice uterine balloon therapy system. In a period of one year ending June 2005 at the RLI, 56 women underwent TBEA, 52% of these due to menorrhagia alone and 43% due to a combination of menorrhagia and dysmenorrhea. In 93% of the cases there were no complications and 63% achieved complete amenorrhea at three months. Long term follow-up of these patients is still ongoing<sup>(14)</sup>.

Thermal balloon ablation endometrial ablation involves a single-use latex or silicon balloon catheter housing a healthy element and two thermocouples, and an umbilical catheter. The length of the uterine cavity ought to be less than 12 centimetres. It is contraindicated in latex allergy, in cases of previous classical Caesarean section and postoperative uterine walls with a thickness of less than 8 millimetres.

Microwave endometrial ablation uses microwaves fixed at 9GHz to destroy endometrium. The instrument can be cleaned, sterilised and reused and it can be performed in women with moderate fibroids.

Above all, patients with menorrhagia need support and encouragement during the course of their treatment. Good communication between the patient and her doctor is an essential key to the success of any mode of treatment adopted.

## REFERENCES

1. Royal College of Obstetricians and Gynaecologists. The initial management of menorrhagia. Evidence-based clinical guidelines No 1. London: RCOG; 1998
2. Vessey MP, Villard-Mackintosh, McPherson K, Yeates D. The Epidemiology of Hysterectomy. Findings in a large cohort study. *Br J Obstet Gynaecol* 1992;99:402-7
3. Coulter A, McPherson K, Vessey M. British women undergo too many or too few hysterectomies? *Soc Med* 1998;27:987-94
4. MORI; Women's Health in 1990. Market Opinion and Research International, 1990 (Research study conducted on behalf of Parke-Darvis Research Laboratories)
5. Smith SK, Abel MH, Kelly RW, Baird DT. Prostaglandin synthesis in the endometrium of women with ovular dysfunctional uterine bleeding. *Br J Obstet Gynaecol* 1981;88:434-42
6. Janssen CA, Scholten PC, Heintz AP. A simple visual assessment technique to distinguish between menorrhagia and normal menstrual loss. *Obstet Gynaecol* 1995;85:977-82
7. Krassas GE, Pontikides N, Kaltsas T, Papadopoulou P, Batrinos M. Menstrual disturbances in thyrotoxicosis. *Clin Endocrinol* 1994;40:641-4
8. Haynes PJ, Anderson AB, Turnbull AC. Patterns of menstrual loss in menorrhagia. *Res Clin Forums* 1979;1:73-8
9. Lethaby AE, Cooke I, Rees M. Progesterone releasing intrauterine systems versus either placebo or any other medication for heavy menstrual bleeding (Cochrane review). The Cochrane Library, Issue 4. Oxford: Update Software; 2001
10. Stewart A, Cummins C, Gold L, Jordan R, Phillips W. The effectiveness of levonorgestrel-releasing intrauterine system versus hysterectomy for treatment of menorrhagia: a randomized trial. *Lancet* 2001;357:273-7
11. Farquhar CM, Kimble R. How do New Zealanders treat menorrhagia? *Aus NZ J Obstet Gynaecol* 1996;36(4):1-4
12. Overton C, Hargreaves J, Maresh M. A national survey of the complications of endometrial destruction for menstrual disorders: The MISTLETOE study. Minimally Invasive Surgical Techniques, Laser EndoThermal or Endoresection. *Br J Obstet Gynaeco* 1997;104(12):1351-9
13. National Institute of Clinical Excellence, NICE 2004/019. Fluid-filled thermal balloon and microwave endometrial ablation techniques for heavy bleeding. Technology Appraisal Guidance 78. April 2004
14. Management of menorrhagia using Thermachoice balloon ablation at the Royal Lancaster Infirmary for the year July 2003-June 2004. An audit by Mary Singh, *et al.* May 2005