Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

INSTITUTE OF OBSTETRICIANS & GYNAECOLOGISTS
ROYAL COLLEGE OF PHYSICIANS OF IRELAND

CLINICAL PRACTICE GUIDELINE

THE INVESTIGATION AND MANAGEMENT OF MENORRHAGIA

Institute of Obstetricians and Gynaecologists,
Royal College of Physicians of Ireland
and the
Clinical Strategy and Programmes Division,
Health Service Executive

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1. Revision History

Version No.	Date	Modified By	Description
1.0			

2. Key recommendations

1. Women presenting with menorrhagia should have a detailed clinical history taken, including assessment of the impact on quality of life and social functioning.

2. Physical examination should include abdominal palpation and pelvic examination when feasible.

3. All women with a palpable abdominal mass or pelvic mass found on vaginal examination should be referred for pelvic imaging. Ultrasound is the first line imaging tool of choice.

4. Women presenting with menorrhagia should have a full blood count (FBC). Hormone tests (FSH, LH, estradiol and progesterone) need not be routinely performed. Thyroid function testing should be reserved for women who are symptomatic.

5. Treatment of menorrhagia should be initiated in the primary care setting when clinical findings are normal. Non-hormonal and hormonal treatments can be used, depending on the woman's desire for pregnancy. Each method should be used for a minimum period of 3 months and preferably six months.

6. Referral for gynaecological opinion should occur when there is failure of medical management to control symptoms, or intolerance to different medications has been experienced. It is recommended that two forms of medical treatment should be used before gynaecological referral.

7. Gynaecological referral should occur in all women where history and clinical examination suggest structural or histological abnormality within the uterus. These include new onset or worsening menorrhagia over the age of 45 years, or menorrhagia at any age with associated intermenstrual and / or postcoital bleeding, tamoxifen use, obesity and PCOS.

8. Treatment of menorrhagia should be guided by the woman's desire for fertility, symptom severity, and personal and family medical history.

9. Women with menorrhagia should be given information on the range of management options, so that she has time to consider the various options available both in primary and secondary care.

10. When hysteroscopy and endometrial sampling is indicated, this should be performed preferentially in an ambulatory setting, due to higher acceptability and lower cost than inpatient hysteroscopy D&C under general anaesthesia.

11. Where possible, and following discussion with the woman, minimally-interventional procedures should be used for the treatment or menorrhagia in preference to major surgical procedures to minimise the risk of procedure-related complications.

3. Purpose and Scope

The purpose of this guideline is to advise on the management of heavy menstrual bleeding. This guideline will not address post-menopausal bleeding or other unscheduled bleeding such as intermenstrual or postcoital bleeding.

These guidelines are intended for primary healthcare physicians and healthcare professionals working in HSE-funded obstetric and gynaecological services. They are designed to guide clinical judgment but not replace it. In individual cases a healthcare professional may, after careful consideration, decide not to follow a guideline if it is deemed to be in the best interests of the woman.

4. Background

Menorrhagia can be defined as "regularly excessive menstrual blood loss that affects the physical, social, emotional or material quality of life of the patient". As the accurate assessment of menstrual blood volume is difficult as well as being highly subjective, the traditional definition of menorrhagia as >80mls menstrual blood loss per cycle is not a meaningful one. (Woolcock JG et al, 2008). Menorrhagia is one of the commonest reasons for referral to a gynaecologist, with an estimated prevalence of 53 per 1000 women (KH Kerulff et al, 1996). Menstrual problems account for around one in five gynaecological outpatient referrals (Coulter A et al, 1991).

Causes of menorrhagia include myometrial abnormalities including uterine fibroids and adenomyosis, and endometrial pathologies including polyps, endometritis, hyperplasia and carcinoma. Rarely, advanced cervical cancer presents with heavy and erratic vaginal bleeding. Bleeding disorders and anticoagulant use may be causative or contributory. Menorrhagia may result in chronic anaemia, but profoundly heavy menstrual loss occasionally necessitates acute hospital admission and blood transfusion. It may interfere with daily activities and quality of life, and may also affect sexual function. The investigation and management of menorrhagia is dependent on patient age and likely cause following initial investigations, and should take into consideration the patient's current contraception needs and plans for future pregnancy. The term "dysfunctional uterine bleeding" is a diagnosis of exclusion, reached when common causes of menorrhagia have been excluded.

Table 1

CAUSES OF ABNORMAL UTERINE BLEEDING (FIGO)

PALM

P; Polyp
A; Adenomyosis
L; Leiomyoma (Fibroid)
M;Malignancy / Hyperplasia

COEIN (non-structural causes)

C; Coagulation disorder
O; Ovulatory dysfunction
E; Endometrial (primary disorder of mechanisms regulating haemostasis)
I; Infection / Iatrogenic (medications)
N; Not yet known

5. Methodology

Publications relevant to the diagnosis and management of menorrhagia were selected and reviewed, together with the national clinical guidelines from other countries. Searches were limited to humans and restricted to the titles of English language articles published between 1966 and 2013.

Relevant meta-analyses, systematic reviews, intervention and observational studies were reviewed.

The principal guideline developers were Dr. Siobhan Corcoran, SpR and Dr. Cathy Burke, consultant gynaecologist at Cork University Maternity Hospital.

The guideline was reviewed by Dr Zelie Gaffney-Daly (GP), Dr Peter McKenna (Rotunda), Dr Aoife O'Neill (CWIUH), Dr Donal O'Brien (NMH), Dr Ray O'Sullivan (Kilkenny), Dr John Bermingham (Waterford), Dr Una Fahy (Limerick).

6. Clinical guideline on the Investigation and Management of Heavy Menstrual Bleeding

6.1 History, clinical examination and investigations

6.1.1 Clinical history

A detailed history should be taken detailing the volume, pattern and duration of menstrual bleeding. Cycle length should be documented. Passage of large clots, flooding of blood, the need for frequent change of protection, the use of double protection, frequent staining of clothes or bedclothes and bleeding which is socially restrictive all indicate significant menorrhagia. Symptoms of anaemia such as breathlessness and postural dizziness should be enquired into. It is worth remembering that progressively-occurring anaemia in women with chronic menorrhagia is often not associated with clinical symptoms of anaemia. Accompanying symptoms relating to possible causes of menorrhagia should be explored. These include pelvic pressure and urinary frequency, pelvic pain / dyspareunia, prolonged bleeding following minor abrasions (Dilley A et al, 2001) and symptoms suggestive of hypothyroidism.

Profound menorrhagia, when associated with intermenstrual and / or postcoital bleeding is an indicator of cervical or endometrial pathology and requires urgent evaluation. Heavy menstrual bleeding related to anovulation occurs physiologically at the extremes of reproductive life and also in women with PCOS and hypothyroidism. The clinical history should probe the impact of symptoms on the patient's quality of life, and identify medical and surgical co-morbidities. Documentation of a family history of endometrial carcinoma and other Lynch syndrome - related cancers such as breast, ovarian and bowel cancer is necessary. Clarification of current or future desire for fertility should be sought as this commonly influences the choice of management.

6.1.2. Examination

On general observation, anaemia may be evident via facial, conjunctival and nail-bed pallor. Clinical features of hypothyroidism should be sought. Thorough abdominal examination seeks to exclude a pelvic mass extending above the symphysis pubis, most commonly the result of uterine fibroids in this context. The normally-sized uterus and ovaries are never palpable on abdominal examination; therefore pelvic ultrasound is mandatory in all women with a palpable abdomino-pelvic mass. Speculum examination with a Cusco's speculum should be performed where feasible to visualise the cervix and will allow swabs to be taken, if indicated.

Bimanual pelvic examination should be performed where feasible to check for the size, position and tenderness of the uterus and may point towards causative pathlogy as well as excluding an adnexal mass. The finding of a fixed retroverted uterus indicates inflammatory and adhesion-generating pathologies

such as endometriosis (commonly co-existing with adenomyosis), or pelvic infection (with associated endometritis). An irregularly-shaped mobile uterus makes the diagnosis of uterine fibroids more likely. Bimanual pelvic examination is not however mandatory in all women presenting with menorrhagia, particularly in younger, never-sexually-active women.

Referral indications for primary care

A history of menorrhagia which includes features concerning for significant pathology should prompt referral to a gynaecologist for further investigation. Of all endometrial cancers diagnosed, around 10% occur in the women under 50 years, most commonly in women closer to the age of menopause. In the patients who develop endometrial cancer premenopausally, BMI >30 was found to be present in around 60%. Synchronous ovarian malignancy was found in one fifth of women (Soliman PT, 2005).

Features concerning for significant pathology prompting early referral include:

1. New-onset or worsening menorrhagia after the age of 45 years. The risk of endometrial hyperplasia or carcinoma is higher in this group.

2. Menorrhagia in women with obesity (BMI >30). Peripheral estrogen (estrone) production in body fat results in higher circulating estrogen levels, which are not adequately opposed by progesterone produced by the corpus luteum.

3. Women with a history of PCOS. Higher circulating estrogen levels are also found in women with PCOS. Therefore patients with this diagnosis who present with menorrhagia are at higher risk of endometrial hyperplasia or carcinoma, even at a young age.

4. The presence of a palpable abdominal mass. An abdominally-palpable mass is always abnormal in the context of menorrhagia, and while usually associated with benign uterine fibroids, must be investigated in the first instance with pelvic ultrasound to exclude more serious pathology such as an ovarian malignancy.

5. Accompanying intermenstrual or post-coital bleeding. Erratic bleeding in association with menorrhagia is more likely to be associated with either endometrial or cervical pathology such as polyps, hyperplasia or carcinoma.

6. Failure of medical management to adequately treat symptoms. Menorrhagia which does not respond to medical treatments at an appropriate dosage and duration of treatment, warrants further investigation. It is appropriate to administer a trial of one form of non-hormonal treatment and one form of hormonal treatment, for a minimum of three months, and preferably six months in primary care prior to referral for hospital-based assessment (See Menorrhagia Care Pathway)

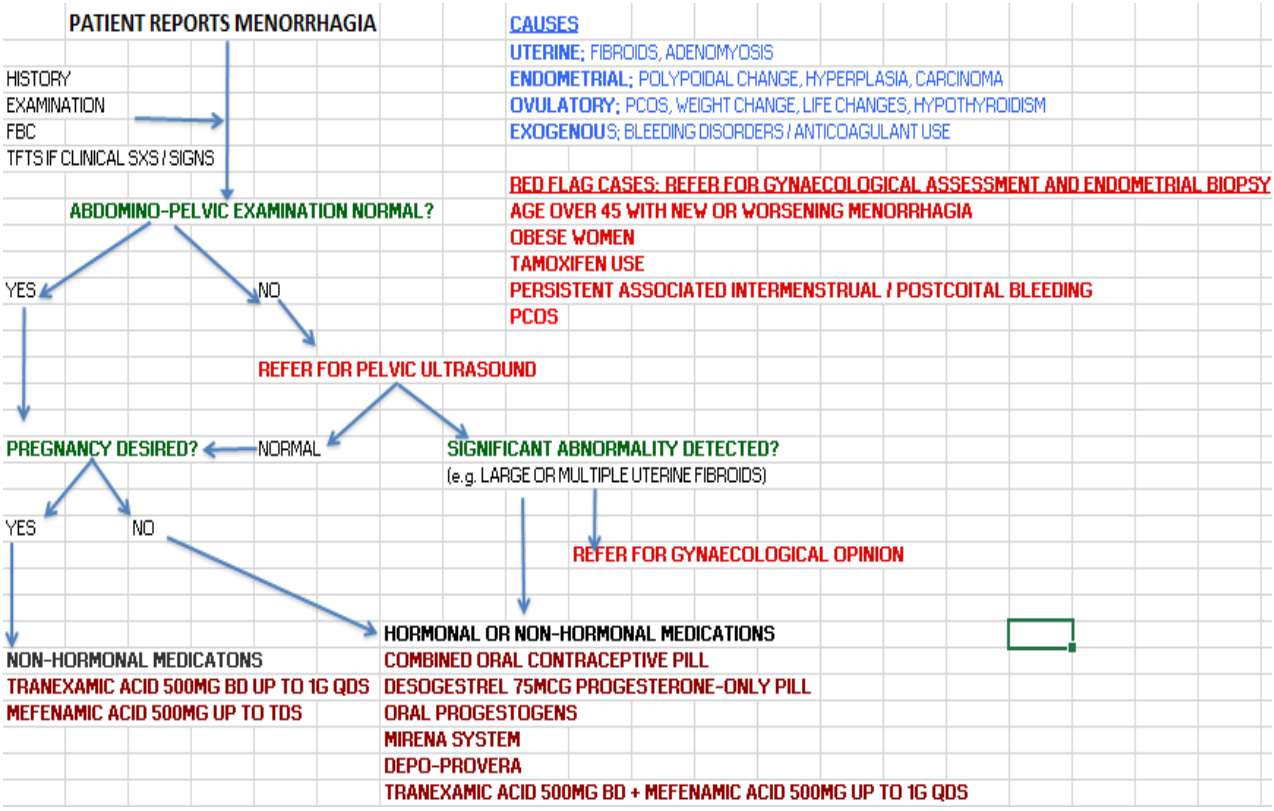
7. Anaemia in patients not responding to medical management. A haemoglobin of <10g/dL indicates significant loss of ability of the body to compensate for regular blood loss. A hypochromic microcytic pattern of anaemia is usual with menorrhagia-associated anaemia, indicating iron deficiency. Red blood cells indices which suggest another cause for anaemia in patients with menorrhagia should be appropriately investigated, as non-gynaecological causes of anaemia such as vitamin B12 or folic acid deficiency may be contributory, or co-existing.

8. Tamoxifen or anastrozole use. Menorrhagia in women using tamoxifen or anastrozole indicates the possibility of endometrial abnormality, and urgent referral for assessment with hysteroscopy and endometrial biopsy is indicated. However, routine endometrial surveillance is not warranted for patients using tamoxifen or anastrozole. (College of Obstetricians and Gynecologists, Committee Opinion No. 601, 2014).

9. Strong family history of endometrial carcinoma, or Lynch syndrome cancers. Menorrhagia in this patient group at higher risk of endometrial cancer warrants referral for rapid investigation.

10. Inability to use medical treatments due to side-effects or contraindications. In patients who tolerate hormonal treatments poorly, non-hormonal treatment should be tried. If contraindications or side-effects are also present for those using non-hormonal treatments, referral for hospital-based assessment is appropriate where other management options can be discussed.

Menorrhagia Care Pathway



6.1.3 Investigation of Menorrhagia

6.1.4 Laboratory Tests

All patients presenting with menorrhagia should have a full blood count taken to exclude significant anaemia, classified as haemoglobin of less than 10g/dL. The platelet level should be assessed, as conditions such as ITP causing thrombocytopenia are a known, if rare, cause of menorrhagia. For patients in whom heavy menstrual bleeding has been present since menarche and/or the family history is suggestive of a bleeding disorder, a coagulation profile should be performed. Investigations for specific bleeding disorders are indicated only if the coagulation profile is abnormal. The likelihood of finding a coagulopathy such as Von Willebrands Disease is greatest in patients with severe anaemia (<10g/dL) and low ferritin levels. (Dilley A et al 2001, Weiss J A, 2012).

There is no evidence to support routine ferritin testing or female hormone testing on patients presenting with heavy menstrual bleeding. Hormone profile testing, including follicle stimulating hormone (FSH), luteinising hormone (LH) progesterone level at any stage of the cycle should not be carried out as part of the routine investigation of the patient with menorrhagia, as they are unhelpful in determining causation. Thyroid function testing should be performed only where history or clinical examination are suggestive of thyroid disease.

Ultrasound

Ultrasound evaluation is indicated in the event of abnormal findings in the primary care setting, and is the imaging modality of first choice. Transabdominal and transvaginal ultrasound are both appropriate imaging modalities, though transvaginal ultrasound usually gives more detailed information. Imaging of the pelvis should be performed if the uterus is palpable abdominally, if bimanual examination reveals a pelvic mass and/or if initial pharmacological management fails. Onward referral to a gynaecologist should be arranged in the event of significant abnormality on ultrasound. The finding of intramural uterine fibroids less than 3cm diameter does not constitute a significant ultrasound abnormality, and, unless multiple fibroids are present, is not an indication for gynaecological referral. The finding of submucosal fibroids on ultrasound indicates that Mirena insertion is not likely to be an effective management strategy, with a high risk of expulsion; however, other hormonal and non-hormonal treatments are appropriate.

Endometrial thickness varies substantially throughout the menstrual cycle and normal endometrial thickness ranges from 4mm in the follicular phase up to 16mm in the late luteal phase. Although often difficult from a practical perspective, endometrial thickness is ideally measured in the follicular phase, when a finding of an endometrial thickness over 10mm is suggestive of pathology. It is also useful to time ultrasound assessment if further scans are planned for comparative purposes. The finding of an endometrial thickness endometrium greater than 15mm is associated with a higher chance of endometrial pathology (Ozdemir S1 et al, 2010), as is the finding of

inhomogeneous echoes and vascular flow within the endometrium. These findings should prompt further evaluation.

Endometrial biopsy

An endometrial biopsy should be performed in all women aged 45 years or older with new-onset or worsening menorrhagia to exclude endometrial carcinoma or hyperplasia. Endometrial biopsy should be performed in women under 45 years who have menorrhagia associated with obesity or PCOS (chronically increased oestrogen exposure) in whom the risk of endometrial cancer is increased. Endometrial biopsy is also indicated in the context of failed medical management and in women at high risk of endometrial cancer (eg family history, tamoxifen use, Lynch syndrome). Various endometrial sampling devices are currently used in gynaecological practice; a meta-analysis involving just under 8000 patients published in 2000 showed Pipelle® to be superior to existing devices at that time. (Weiss J A, 2012). A recent study performed in an outpatient hysteroscopy clinic setting showed Endosampler® to be superior to Endocurette® in terms of ease of sample retrieval, but associated with a slightly higher pain score. (Khalid AS et al, 2014).

Hysteroscopy

Hysteroscopy is appropriate when there is regular unscheduled vaginal bleeding (intermenstrual or post-coital bleeding), when ultrasound suggests an endometrial polyp, or when endometrial carcinoma is suspected on ultrasound assessment. It is not a mandatory investigation in all women presenting with menorrhagia, as the likelihood of endometrial pathology is very low in younger women. Patient age, symptom severity, associated symptoms and clinical risk factors should drive the intensity of investigation.

Increasingly, the traditional investigation of hysteroscopy with dilation and curettage (D&C) is being replaced by ambulatory (outpatient) hysteroscopy with endometrial biopsy. This provides significant benefits for patients in terms of convenience and avoidance of general anaesthesia with its associated risks. High patient satisfaction and acceptability rates are reported, and significant cost savings can be made when hospitals invest in this approach to the investigation and management of abnormal uterine bleeding. The "one-stop shop" pathway, combining diagnostic procedures of ultrasound, hysteroscopy and endometrial biopsy together with LNG-IUS insertion and the later option of outpatient endometrial ablation should become the standard of care for the investigation and management of abnormal uterine bleeding in all gynaecology units in the coming decade.

6.2. Education, Counselling and Information Provision

It is important for clinicians to be aware of their patients' health literacy, which refers to the way in which information is assimilated, decisions made and the likelihood of the patient correctly following the treatment plan. Written

information on the causes, investigations, treatment options and potential side-effects of treatment should be available to patients presenting with menorrhagia Adequate time should be allowed to review information, discuss treatment options and answer questions. The avoidance of medical jargon, use of simple illustrations and confirming that patients understand how to use the prescribed treatment increases the likelihood of treatment success. Appendix 1 provides a sample information leaflet on management options for menorrhagia in both primary care and hospital-based settings and lists side-effects associated with the various treatments for menorrhagia.

6.3 Management of Menorrhagia

6.3.1 Pharmacological agents

Pharmacological treatment should be commenced when there is no reason to supect significant pathology following history and clinical examination (together with ultrasound findings, if indicated). Pharmacological treatments are appropriate for most causes of menorrhaiga Ultrasound findings of uterine fibroids should not preclude medical treatment and do not indicate immediate referral for assessment by a gynaecologist.

Non-hormonal agents

6.3.1.1 Non-steroidal anti-inflammatory drugs (NSAIDS)

NSAIDs have been shown to reduce menstrual blood loss (MBL) by 20- 45% (O'Connor H et al, 1996). A Cochrane review on the use of NSAIDS for menorrhagia found that they reduce heavy menstrual bleeding compared to placebo but are less effective than tranexamic acid. (Lethaby A et al, 2007).

Mefenamic acid (500mg up to tds) is the most commonly-used NSAID for menorrhagia but other NSAIDs such as ibuprofen or naproxen may also be used. The usual NSAID contra-indications apply these agents. A combination of NSAIDS and tranexamic acid gives enhanced reduction in MBL; this combination is especially useful where dysmenorrhoea co-exists with menorrhagia. Women with menorrhagia who also experience dysmenorrhea prior to menstruation are advised to commence NSAIDs on the day of onset of premenstrual pain.

6.3.1.2 Tranexamic acid

An antifibrinolytic agent, this medication inhibits dissolution of the naturally-occuring microthrombi in small endometrial vessels during menstruation. It has been shown to reduce MBL by around 50% (O'Connor H et al, 1996). It is highly acceptable to patients, having a low side-effect profile, but is contraindicated in patients with a personal history or strong family history of thrombosis due to its thrombogenic nature.

The use of NSAIDs alone or in combination with tranexamic acid may be continued for as long as it is beneficial to the patient. They can also be used whilst the patient awaits further investigation and definitive management in a hospital setting. If there is no discernible improvement in symptoms within 3-6 menstrual cycles, a trial of another agent is recommended.

Hormonal agents

6.3.1.3 Levonorgestrel-releasing intrauterine system (LNG-IUS)

The sustained-release progestogen intrauterine system should be considered when long-term (at least 12 months) use is anticipated. The LNG-IUS reduces MBL by 74 to 97 per cent after one year of use and is appropriate for use in women with bleeding disorders (Demers C et al, 2006). Patients should be advised that they may have erratic bleeding, particularly in the first few months following insertion and possibly lasting longer than this. They should therefore be advised to persevere if symptoms are tolerable for at least 6 cycles to see the benefits of the treatment. The LNG-IUS device currently licenced for use in patients with menorrhagia in Ireland, releases 20mcg of levonorgestrel daily, and has a duration of effect of 5 years.

6.3.1.4 Combined oral contraceptives (COCs)

COCs containing 30 to 35 mcg ethinyl estradiol regulate bleeding patterns in significantly more women than placebo and result in reduction in MBL of up to 43%. (Dijkhuizen FP et al, 2000). Although less effective at reducing blood flow than the LNG-IUS in patients with heavy menstrual bleeding (Endrikat J et al, 2009), COCs are easily-administered, and preparations may be changed in the event of side-effects. When withdrawal bleeds are unacceptably heavy, running pill packets back-to back for 3-6 months is advisable. Absolute and relative contra-indications to oral contraceptive use as per the UKMEC (UK Medical Eligiibilty Criteria) .

6.3.1.5 Norethisterone

This progestogen is administered at a dose of up to 15 mg daily from days 5 to 26 of the menstrual cycle in women with menorrhagia, resulting in inhibition of ovulation and endometrial atrophy. Lower doses than this may however be effective. Oral progestogens given during the luteal phase only are not effective in the treatment of menorrhagia. (Lethaby A, 2008). More prolonged and profound menstrual bleeds, (common during anovulatory cycles at the extremes of reproductive life) may necessitate a more prolonged course of norethisterone at a higher dose. In these cases it is often necessary to prescribe 10-20mg norethisterone twice daily for 10 to 14 days. Patients should be told to expect a withdrawal bleed on ceasing oral progesterone, which should not be recommenced unless the withdrawal bleed is unacceptably heavy.

6.3.1.6 Injectable long-acting progestogens

Initially developed as a contraceptive, depo-medroxyprogesterone acetate(DMPA) administered as a 150mg intramuscular injection every three months, is an effective treatment for menorrhagia, due to its inhibition of ovulation and direct atrophic effect on endometrium. Contraindications to its use include severe hepatic disease, as well as suspected or known breast or genital tract cancer. Although there has been concern regarding the effect of DMPA on bone mineral density, there is no good quality evidence showing that fracture risk is increased and the bone mineral density returns to baseline within 6 months of discontinuation. Use beyond two years is not contra-indicated (Farquhar C et al, 2009). Close attention should be paid to bone density when DMPA is used in women approaching menopause whose risk of decreased bone density in early menopause is higher; bone densitometry should be performed in these patients.

6.3.1.7 Gonadotrophin-releasing hormone agonists (GnRH)

GnRH agonists are not routinely used in the management of menorrhagia, however may be considered when other treatment options are not desired by the patient, or are contraindicated. GnRH agonists are more commonly used to provide pre-operative reduction in fibroid or uterine volume prior to myomectomy or hysterectomy, and are prescribed only as part of hospital based management. Add-back estrogen treatment may be considered if menopausal symptoms are troublesome.

6.3.2 Nonhysterectomy surgical treatments for menorrhagia

Dilation and currettage (D&C) is a diagnostic procedure with limited therapeutic efficacy. It is used to obtain a sample of the endometrium for histological analysis in order to exclude endometrial pathology.

6.3.2.1 Endometrial Ablation

Endometrial ablation is recommended for use in patients with a normal uterine cavity, including the presence of fibroids up to 3 cm in maximum diameter causing distortion of the uterine cavity. This treatment option is suitable only if the patient has no desire for future fertility. Reliable or permanent contraception should be advised and documented as serious pregnancy-related complications such as placenta accreta and cervical ectopic pregnancy are commoner when pregnancy occurs after endometrial ablation. Women should be offered a second- or third generation endometrial ablation technique (Kroft J et al, 2013).

The two most widely-used endometrial ablation techniques in Ireland are impedence-controlled bipolar radiofrequency ablation and thermal balloon endometrial ablation. Second- and third- generation procedures are safer, technically easier to perform and can be performed under local anaesthesia in an

ambulatory setting compared with the now rarely-performed first generation techniques of rollerball ablation and transcervical resection of the endometrium (TCRE). Manufacturer's guidelines must be strictly adhered to when considering and performing endometrial ablation procedures.

6.3.2.2 Myomectomy

This surgical treatment involves enucleation of a single or multiple fibroids from the uterus with subsequent closure of myometrium. It is generally performed via laparotomy but a laparoscopic approach may also be taken. Pre-operative ultrasound or MRI are recommended to evaluate the number, size and location of fibroids. Myomectomy is asssociated with significantly greater blood loss and risk of blood transfusion than hysterectomy and as a result is usually reserved for women who are planning a future pregnancy. Hysterectomy is recommended in women with uterine fibroids who have no desire for future pregnancy or in whom other management strategies for fibroids have been unsuccessful.

Hysteroscopic myomectomy is performed in patients with submucosal fibroids where more than 50% of the fibroid projects into the uterine cavity. Patients should be advised that hysteroscopic myomectomy may require more than one procedure for complete removal, depending on the size and location of the fibroid. Consideration should be given to GnRH agonist use for 3-4 months prior to myomectomy to decrease fibroid size and vascularity. Ulipristal acetate, a selective progesterone receptor modulator (SPRM), has recently been licenced for pre-operative fibroid shrinkage (Donnez J et al, 2012).

6.3.2.3 Uterine artery embolisation (UAE)

This radiological procedure involves occlusion of the uterine arteries using polyvinyl alcohol (PVA) particles via a femoral artery guided catheter. UAE is recommended for patients with fibroid-related heavy menstrual bleeding who wish to avoid surgery or have contraindications to general anaesthesia. Prior to UAE, the uterus should be imaged to determine the number, size, location and vascularity of the fibroids and assess feasibility of embolisation. MRI with gadolinium is superior to ultrasound imaging in providing this information (Rajan DK1 et al, 2011).

6.3.2.4 Hysterectomy

Hysterectomy is the definitive treatment for menorrhagia. It should be considered in patients where other treatment options have failed, been declined, or are unsuitable, where there is a wish for complete amenorrhoea and the patient is sure that her family is complete. When hysterectomy is being considered, there should be a discussion around surgical route, complications of surgery, and any specific patient risk factors. Although patient satisfaction is high following hysterectomy, the potential impact of hysterectomy on bladder function and the potential psychological and psychosexual sequelae of this surgery should be explained. Regret at the loss of fertility is not uncommonly reported following hysterectomy and is higher in patients who have had

oophorectomy at the time of surgery. (Farquhar C et al, 2006). Patients should be provided with or directed towards comprehensive information on hysterectomy with or without oophorectomy or salpingectomy prior to planned surgery, be given adequate time to formulate questions and have any questions answered prior to consenting to surgery. The decision to perform oophorectomy at the time of hysterectomy in the presence of normal ovaries should take into account patient choice, age, family history and intra-operative findings. Routine removal of healthy ovaries at the time of hysterectomy should not be undertaken without prior consent. In patients with a strong family history of breast or ovarian cancer, oophorectomy may be advisable; alternatively referral for genetic counselling pre-operatively may be considered. Patients contemplating oophorectomy should be counselled about the impact of menopausal symptoms and the potential need for hormone replacement therapy. The patient should be counselled about the possibilty of early menopause even with retention of both ovaries at the time of hysterectomy, and the potential effects of this.

7. Hospital Equipment and Facilities

1. Outpatient endometrial sampling should be available to patients attending the gynaecology clinic.

2. Pelvic ultrasound performed by adequately trained staff using fit – for – purpose machines should be available for those in whom it is clinically indicated.

3. Outpatient (ambulatory) hysteroscopy has been shown to be safe, effective, efficient and acceptable to patients. It is also more cost-effective than inpatient procedures and ideally this option should be available in all gynaecological units.

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9. Implementation Strategy

- Distribution of guideline to all members of the Institute and to all maternity units.
- Distribution to the Director of the Acute Hospitals for dissemination through line management in all acute hospitals.
- Implementation through HSE Obstetrics and Gynaecology programme local implementation boards.
- Distribution to other interested parties and professional bodies.

10. Key Metrics

1. Referral to review time for those with "red flag" symptoms mentioned in the referral (< 4 weeks)

2. Percentage of women who attend an ambulatory gynaecology clinic for the investigation and treatment of menorrhagia (>50%).

3. Percentage of women, without red flag symptoms or signs, treated with at least two forms of medical management in a primary care setting prior to referral for gynaecological assessment (>80%).

4. Percentage of women undergoing endometrial biopsy prior to surgical treatment of menorrhagia (100%).

5. Percentage of women undergoing endometrial ablation who have a documented plan for effective long-term or permanent contraception (100%).

11. Qualifying statement

These guidelines have been prepared to promote and facilitate standardisation and consistency of practice using a multidisciplinary approach. Clinical material offered in this guideline does not replace or remove clinical judgement or the professional care and duty necessary for each pregnant woman. Clinical care carried out in accordance with this guideline should be provided within the context of locally available resources and expertise.

This guideline does not address all elements of standard practice and assumes that individual clinicians are responsible for:

- Discussing care with women in an environment that is appropriate and which enables respectful confidential discussion
- Advising women of their choices and ensure informed consent is obtained
- Meeting all legislative requirements and maintaining standards of professional conduct
- Applying standard precautions and additional precautions, as necessary, when delivering care
- Documenting all care in accordance with local and mandatory requirements.

12. Appendices

Treatment	**Potential unwanted outcomes experienced by some women** (Common: 1 in 100 chance; less common: 1 in 1000 chance; rare: 1 in 10,000 chance; very rare: 1 in 100,000 chance)
Levonorgestrel-releasing intrauterine system	Common: irregular bleeding that may last for over 6 months; hormone-related problems such as breast tenderness, acne or headaches, which, if present, are generally minor and transient Less common: amenorrhoea Rare: uterine perforation at the time of insertion
Tranexamic acid	Less common: indigestion; diarrhoea; headaches
Non-steroidal anti-inflammatory drugs	Common: indigestion; diarrhoea Rare: worsening of asthma in sensitive individuals; peptic ulcers with possible bleeding and peritonitis
Combined oral contraceptives	Common: mood changes; headaches; nausea; fluid retention; breast tenderness Very rare: deep vein thrombosis; stroke; heart attacks
Oral progestogen (norethisterone)	Common: weight gain; bloating; breast tenderness; headaches; acne (but all are usually minor and transient) Rare: depression
Injected progestogen	Common: weight gain; irregular bleeding; amenorrhoea; premenstrual-like syndrome (including bloating, fluid retention, breast tenderness) Less common: small loss of bone mineral density, largely recovered when treatment discontinued
Gonadotrophin-releasing hormone analogue	Common: menopausal-like symptoms (such as hot flushes, increased sweating, vaginal dryness) Less common: osteoporosis, particularly trabecular bone with longer than 6-months' use
Endometrial ablation	Common: vaginal discharge; increased period pain or cramping (even if no further bleeding); need for additional surgery Less common: infection Rare: perforation (but very rare with second generation techniques)
Uterine artery embolisation	Common: persistent vaginal discharge; post-embolisation syndrome – pain, nausea, vomiting and fever (not involving hospitalisation) Less common: need for additional surgery; premature ovarian failure particularly in women over 45 years old; haematoma Rare: haemorrhage; non-target embolisation causing tissue necrosis; infection causing septicaemia

Myomectomy	Less common: adhesions (which may lead to pain and/or impaired fertility); need for additional surgery; recurrence of fibroids; perforation (hysteroscopic route); infection Rare: haemorrhage
Hysterectomy	Common: infection Less common: intraoperative haemorrhage; damage to other abdominal organs, such as the urinary tract or bowel; urinary dysfunction – frequent passing of urine and incontinence Rare: thrombosis (DVT and clot on the lung) Very rare: death (Complications are more likely when hysterectomy is performed in the presence of fibroids.)
Oophorectomy at time of hysterectomy	Common: menopausal-like symptoms