Abnormal uterine bleeding
AUB

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Accepted terminology for common types of AUB

- **HMB**: heavy menstural bleeding excessive menstrual blood loss .
- **IMB**: intermenstural bleeding bleeding between periods, often seen with endometrial and cervical polyps ,
Benign conditions of the uterus, cervix and endometrium), also endometriosis , Benign conditions of the ovary and pelvis).
- **PCB**: postcoital bleeding bleeding after sex. Often associated with cervical abnormalities , Premalignant and malignant disease of the lower genital tract).
- **PMB**:postmenopousal bleeding bleeding more than 1 year after cessation of periods. Exclude endometrial pathology or vaginal atrophy , The menopause and postreproductive health and Malignant disease of the uterus).
- **BEO**: 'bleeding of endometrial origin', a diagnosis of exclusion, has replaced the term 'dysfunctional uterine bleeding' (DUB).

Heavy menstrual bleeding

- Heavy menstrual bleeding (HMB) is now the preferred description as it is simple and easily translatable into other languages. It replaces the older term ‘menorrhagia
- HMB is defined as a blood loss of greater than 80 mL per period. In reality, methods to quantify menstrual blood loss are both inaccurate (poor correlation with haemoglobin level) and impractical and so a clinical diagnosis based on the patient’s own perception of blood loss is preferred.
  The presentation of HMB is common because women are having fewer children and consequently more menstrual cycles.

- The aetiology of HBM may be hormonal or structural, with common causes listed below:
- • Fibroids: 30% of HMB is associated with fibroids.
- • Adenomyosis: 70% of women will have AUB/HMB.
- • Endometrial polyps ..
- • Coagulation disorders (e.g. von Willebrand disease).
- • Pelvic inflammatory disease (PID).
- • Thyroid disease.
- • Drug therapy (e.g. warfarin).
- • Intrauterine devices (IUDs).
- • Endometrial/cervical carcinoma

BEO

- Despite appropriate investigations, often no pathology can be identified. Bleeding of endometrial origin (BEO) is the diagnosis of exclusion. This replaces the older ‘dysfunctional uterine bleeding’ (DUB). Disordered endometrial prostaglandin production has been implicated in the aetiology of BEO, as have abnormalities of endometrial vascular development

Symptoms which can be associated with HMB and related pathologies

Irregular bleeding Intermenstrual bleeding Postcoital bleeding	Endometrial or cervical polyp
Excessive bruising/bleeding from other sites History of postpartum haemorrhage (PPH) Excessive postoperative bleeding Excessive bleeding with dental extractions Family history of bleeding problems	Coagulation disorder (Coagulation disorders will be present in 20% of those presenting with 'unexplained' heavy menstrual bleeding.)
Unusual vaginal discharge	Pelvic inflammatory disease
Urinary symptoms	Pressure from fibroids
Weight change, skin changes, fatique	Thyriod desease

History and examination

- Patients will have different ideas as to what constitutes a ‘heavy period’ . Useful questions include:
  - How often does soaked sanitary wear need to be changed?
  - Is there presence of clots?
  - Is the bleeding so heavy (flooding) that it spills over your towel/tampon and on to your pants, clothes or bedding?
  - Have you had to take any time off work due to this bleeding? Do you ever find you are confined to your house when the bleeding is at its worst?

  After examining the patient for signs of anaemia, it is important to perform an abdominal and pelvic examination in all women complaining of HMB. This enables any pelvic masses to be palpated, the cervix to be visualized for polyps/carcinoma, swabs to be taken if pelvic infection is suspected or a cervical smear to

Intermenstrual and postcoital bleeding

- Careful examination of the cervix is essential, and suspicious findings are indications for colposcopy. In sexually active women, chlamydial infection should be excluded [B].
  If IMB occurs only mid-cycle, then further investigation is not required. Although the incidence of structural and histological abnormalities rises with increasing age,[6,9] fibroids and polyps can cause symptoms in younger women.
  TVS is currently regarded as the primary investigation for the detection of endometrial polyps or submucosal fibroids [A], backed up by biopsy and/or hysteroscopy if additional investigations are required. In the majority of cases, no abnormality is found and spontaneous resolution of both IMB and PCB commonly occurs.[13]

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The NICE guidelines for HMB indicate the following investigations and are useful guide for clinicians:

- Full blood count (FBC) should be performed in all women (but serum ferritin should not be performed).
- Coagulation screen only if coagulation HMB since menarche or family history of coagulation defects.
- Hormone testing should not be performed.
- Pelvic ultrasound scan if history suggests structural or histological abnormality such as PCB, IMB, pain/pressure symptoms, or enlarged uterus or vaginal mass is palpable on pelvic examination.
- High vaginal and endocervical swabs.
- EB endometrial biopsy should be considered if risk factors such as age over 45, treatment failure or risk factors for endometrial pathology. Sensitivity of EB increases when performed in addition to using the cut-off of 4mm endometrial thickness on TVUSS.
- Thyroid function tests should only be carried out when the history is suggestive of a thyroid disorder.

- An outpatient hysteroscopy with guided biopsy may be indicated if:
  - EB biopsy attempt fails.
  - EB biopsy sample is insufficient for histopathology assessment.
  - TVUSS is inconclusive, for example to establish the exact location of a submucosal or intramural fibroid.
  - There is an abnormality on TVUSS amenable to treatment (e.g. suggested endometrial polyp or submucosal fibroid), if
- In patient hystroscopic examination.
- there are facilities to perform resections.
  If the patient fails to tolerate an outpatient procedure, if the cervix needs to be dilated to enter the cavity, or for treatment of large polyps or submucosal fibroids, then a hysteroscopy proceeding to treatment under general anaesthetic may be required.

Role of EB in HMB

An EB or outpatient hysteroscopy is indicated if there is:

- PMB and endometrial thickness on TVUSS >4 mm.
- HMB over 45 years.
- HMB associated with IMB.
- Treatment failure.
- Prior to ablative techniques

Management

- For some women, the demonstration that their blood loss is in fact ‘normal’ may be sufficient to reassure
  them and make further treatment unnecessary. For others, there are a number of different treatments for
  HMB. The effectiveness of medical treatments is often temporary, while surgical treatments are mostly incompatible with desired fertility.
  When selecting appropriate management for the patient, it is important to consider and discuss:
  - The patient’s preference of treatment.
  - Risks/benefits of each option.
  - Contraceptive requirements:
  - family complete?
  - current contraception?
  - Past medical history:
  - any contraindications to medical therapies for HMB?
  - suitability for an anaesthetic.
  - Previous surgical history on uterus.

Medical

- Initial management of HMB in the absence of structural or histological abnormality should be medical. The National Institute for Health and Care Excellence (NICE) guidelines suggest the following order:
  - Levonorgestrel intrauterine system (LNG-IUS, Mirena™), provided long-term use of at least 12 months is expected. LNG-IUS, Mirena™ has revolutionized the treatment of HMB. Mean reductions in mean blood loss (MBL) of around 95% are achieved by 1 year after LNG-IUS insertion. It provides a highly effective alternative to surgical treatment, with few side-effects. Indeed, the Royal College of Obstetricians and Gynaecologists (RCOG) has suggested that the LNG-IUS should be considered in the majority of women as an alternative to surgical treatment. It is obviously not suitable for women wishing to conceive.
  - Tranexamic acid, an antifibrinolytic that reduces blood loss by 50% and is taken during menstruation, or mefenamic acid, which inhibits prostaglandin synthesis and reduces blood loss by 30%, or COCP, which will induce slightly lighter periods.
  - Norethisterone, taken 15 mg daily in a cyclical pattern from day 6 to day 26 of the menstrual cycle.
  - Gonadotrophin-releasing hormone (GnRH) agonists: these drugs act on the pituitary to stop the production of oestrogen, which results in amenorrhoea. These are only used in the short term due to the resulting hypo-oestrogenic state that predisposes to osteoporosis. They may be used preoperatively to shrink fibroids or cause endometrial suppression to enhance visualization at hysteroscopy. In severe HMB they can allow the patient the opportunity to improve their haemoglobin by providing a respite from bleeding

Surgical

- Surgical treatment is normally restricted to women for whom medical treatments have failed or where there are associated symptoms such as pressure symptoms from fibroids or prolapse. Women contemplating surgical treatment for HMB must be certain that their family is complete. While this caveat is obvious for women contemplating hysterectomy, in which the uterus will be removed, it also applies to women contemplating endometrial ablation. Therefore, women wishing to preserve their fertility for future attempts at childbearing should be advised to use medical methods of treatment. The risks of a pregnancy after an ablation procedure theoretically include prematurity and morbidly adherent placenta.

Endometrial ablation

All endometrial destructive procedures employ the principle that ablation of the endometrial lining of the uterus to sufficient depth prevents regeneration of the endometrium. Ablation is suitable for women with a uterus no bigger than 10 weeks' size and with fibroids less than 3 cm.

The first-generation techniques including transcervical resection of the endometrium with electrical
diathermy or rollerball ablation have largely been replaced by newer second-generation techniques
including:

- Impedance controlled endometrial ablation (Novosure™).
- Thermal uterine balloon therapy.
- Microwave ablation (Microsulis™) .

As a general rule, all women undergoing endometrial ablation should have access to a secondgeneration technique. After treatment, 40% will become amenorrhoeic, 40% will have markedly reduced menstrual loss and 20% will have no difference in their bleeding. Some authorities have suggested that endometrial ablation is so successful that all women with HMB should be encouraged to consider it before opting for hysterectomy. While there are merits to this argument, some women, after informed
discussion, will still prefer hysterectomy and they should therefore be considered for this procedure instead.

- ***Umbilical artery embolization***

  UAE is treatment useful for HMB associated with fibroids, as discussed in , Benign conditions of the uterus, cervix and endometrium.

  Myomectomy

  This may be a sensible option or women with HMB secondary to large fibroids with pressure symptoms
  who wish to conceive (and are at an age where this is realistic).

  Transcervical resection of fibroid

  As described in , Benign conditions of the uterus, cervix and endometrium and ,Gynaecological surgery and therapeutics, transcervical resection of a large submucosal fibroid (TCRF)
  may reduce HMB and is appropriate in women wishing to conceive.

- ***Hysterectomy***

  A hysterectomy is the surgical removal of the uterus as described in , Gynaecological surgery
  and therapeutics. It can be avoided in some women by medical and ablation procedures. However, it can
  be necessary to control HMB in women who have not responded. It may be a first-line treatment in
  women who have HMB associated with large fibroids who also have pressure symptoms, or who have a
  smaller uterus and associated uterine prolapse.

  Acute HMB

  Not infrequently women are admitted to hospital with AUB. They require stabilization, examination to
  exclude cervical abnormalities and pelvic masses, medication to arrest bleeding and correct anaemia,
  investigation and discharge with a long-term plan to avoid further admissions

dysmenorrhoea

- dysmenorrhoea is defined as painful menstruation. It is experienced by 45–95% of women of reproductive age. Primary dysmenorrhoea describes painful periods since onset of menarche and is unlikely to be associated with pathology. There is some evidence to support the assertion that primary dysmenorrhoea improves after childbirth, and it also appears to decline with increasing age. Secondary dysmenorrhoea describes painful periods that have developed over time and usually have a secondary cause

Aetiology of secondary dysmenorrhoea

- Aetiology includes:
  - Endometriosis and adenomyosis , Benign conditions of the ovary and pelvis).
  - Pelvic inflammatory disease.
  - Cervical stenosis and haematometra (rarely).

- **History and examination**

  Patients will have different ideas as to what constitutes a painful period. For some patients reassurance that the pain may be normal for her will help. For others the ability to alter the menstrual cycle to avoid having a period during key events, for example school examinations or holidays, will be helpful.
  To ascertain the actual severity of the pain, the following questions may be useful:
  - Do you need to take painkillers for this pain? Which tablets help?
  - Have you needed to take any time off work/school due to the pain?

  Some primary dysmenorrhoea is associated with flushing and nausea, which may be prostaglandin related. It is important to distinguish between menstrual pain that precedes the period (a vital clue in endometriosis) and pain that only occurs with bleeding. Other important clues about the aetiology include pain that occurs with passage of clots, in which case medication to reduce flow may be effective.
  Secondary dysmenorrhoea may be associated with dyspareunia or AUB, which may point towards a pathological diagnosis.
  An abdominal and pelvic examination should be performed (excepting adolescents). Certain signs associated with endometriosis include a pelvic mass (if an endometrioma is present), a fixed uterus (if adhesions are present) and endometriotic nodules (palpable in the pouch of Douglas or on the uterosacral ligaments). An enlarged uterus may be found with fibroids. Abnormal discharge and tenderness may be seen with PID.
  'Red flags' in the expression of dymenorrhoea lead the clinician to suspect serious pathology and include an abnormal cervix on examination, persistent PCB or IMB, which may indicate endometrial or cervical pathology, or a pelvic mass that is not obviously the uterus

Investigations

- • High vaginal and endocervical swabs.
  • TVUSS scan may be useful to detect endometriomas or appearances suggestive of adenomyosis (enlarged uterus with heterogeneous texture) or to image an enlarged uterus.
  • Diagnostic laparoscopy: performed to investigate secondary dysmenorrhoea:
  • when the history is suggestive of endometriosis;
  • when swabs and ultrasound scan are normal, yet symptoms persist;
  • when the patient wants a definite diagnosis or wants reassurance that their pelvis is normal.
  Discussion about laparoscopy should include risks and the possibility that this investigation may show
  no obvious causes for their symptoms.
  If features in the history suggest cervical stenosis, ultrasound-guided hysteroscopy can be used to investigate further. However, this condition is an infrequent cause of dysmenorrhoea, and this investigation should not be routine. Laparoscopy for primary dysmenorrhoea should not usually be performed

Management

- • Non-steroidal anti-inflammatory drugs (NSAIDs): effective in a large proportion of women. Some examples are naproxen, ibuprofen and mefenamic acid.
  • Hormonal contraceptives: COCP is widely used but, surprisingly, a recent review of randomized controlled trials provides little evidence supporting this treatment as being effective for primary dysmenorrhoea. Progestogens, either oral (desogestrol) or parenteral (medroxyprogesterone, etonogestrel) may be useful to cause anovulation and amenorrhoea.
  • LNG-IUS: there is evidence that this is beneficial for dysmenorrhoea and indeed can be an effective treatment for underlying causes, such as endometriosis and adenomyosis. It is often used as a first-line treatment before laparoscopy.
  • Lifestyle changes: there is some evidence to suggest that a low fat, vegetarian diet may improve dysmenorrhoea. There are suggestions that exercise may improve symptoms by improving blood flow to the pelvis.
  • Heat: although this may seem a rather old-fashioned method for helping dysmenorrhoea, there is strong evidence to prove its benefit. It appears to be as effective as NSAIDs.
  • GnRH analogues: this is not a first-line treatment nor an option for prolonged management due to the resulting hypo-oestrogenic state. These are best used to manage symptoms if awaiting hysterectomy or as a form of assessment as to the benefits of hysterectomy. If the pain does not settle with the GnRH analogue, it is unlikely to be resolved by hysterectomy.
  Surgery: signs or symptoms of pathology such as endometriosis may warrant surgical laparoscopy to perform adhesiolysis or treatment of endometriosis/drainage of endometriomas