Menorrhagia

- **Menorrhagia** is defined as excessive menstrual blood loss which is problematic enough to cause disruption to a woman’s functional capacity and/or physical, psychological and social wellbeing.
  - Mean monthly menstrual blood loss is ~35-40ml; menorrhagia has been defined as >80ml.
  - However, the problem is extremely subjective and menstrual blood loss is difficult to measure.

- **Epidemiology:** 33% of women describe their periods as “heavy”; causes up to 20% of gynaec referrals.

- **Differential diagnosis**
  - Complication of pregnancy (always ascertain LMP!)
    - Miscarriage (threatened/incomplete/complete)
    - Ectopic pregnancy
  - Non-uterine bleeding
    - Cervical or vaginal trauma
    - Cervical or vaginal infection e.g. genital warts
    - Cervical ectropion, polyp or cancer
    - Atrophic vaginitis
    - Foreign body in the vagina

- **Causes**
  - **Dysfunctional uterine bleeding (DUB):** 40-60% of women have no underlying pathology – this is a diagnosis of exclusion and is likely to be associated with disruption of the HPO axis cycle.
  - **Anovulatory DUB (~90% cases)**
    - defective egg formation and maturation → no corpus luteum → no progesterone
    - subsequent unopposed non-cyclical oestrogen secretion results in ↓↓ endometrial proliferation and cystic glandular hyperplasia → delayed start of period, irregular endometrial shedding, ↑↑ blood and tissue loss, poor endometrial healing
    - most common at extremes of reproductive life (menarche and menopause)
    - anovulatory cycles may also result from PCOS, OCP use, systemic illness and stress
  - **Ovulatory DUB (~10% cases)**
    - persistently low oestrogen levels often result in prolonged progesterone secretion, which causes irregular endometrial shedding and breakthrough bleeding
    - this can also be a result of POP use
    - may also be associated with factors affecting vascular tone and platelet aggregation:
      - o excessive vasodilatory prostaglandin E₂
      - o excessive fibrinolysis
      - o defective vascular growth factors/endothelins

- **Pelvic pathology**
  - **Uterine fibroids (usually submucous)**
  - **Adenomyosis/endometriosis**
  - **Endometrial polyps or cancer**
  - **Pelvic inflammatory disease**
  - **Myometrial hypertrophy**
  - Foreign body e.g. coil
  - Vascular malformations

- **Systemic pathology**
  - Hypothyroidism
  - Cushing’s syndrome
  - Bleeding disorders
  - Kidney failure
  - Liver failure
  - **Iatrogenic**
    - IUCD
    - Anticoagulants

- **History**
  - Menstrual cycle: LMP; details of cycle length and regularity; cyclical symptoms
  - Bleeding: what form(s) of protection they use and how often it needs changing; flooding; clots; any intermenstrual or post-coital bleeding
  - Pain: dysmenorrhoea (remember to ask when in cycle it occurs), dyspareunia, pelvic pain
  - Sexual history: past sexually transmitted infections, most recent STI screen; contraception
  - Smear history
  - Obstetric history: parity and plans for future pregnancies
  - Symptoms of anovulation: pallor, tiredness, SOB, palpitations
  - Symptoms of bleeding disorder: bleeding gums, prolonged bleeding, easy bruising
  - Symptoms of hypothyroidism: skin/hair changes, cramps, weight gain, constipation, fatigue, cold
  - Relevant medical, surgical, drug and family history
  - Impact of problem upon functional capacity and quality of life

- **Examination**
  - General examination for BMI, pallor, koilonychia, bruising and signs of hypothyroidism
  - Sexual history:
    - past sexually transmitted infections, most recent STI screen; contraception
  - Obstetric history:
    - miscarriage (threatened/incomplete/complete)
    - complications of pregnancy (always ascertain LMP!)
  - Pelvic examination:
    - Cusco speculum: inspect the vagina and cervix, take swabs/smears if indicated
    - Bimanual examination: size, position, tenderness, mobility and consistency of uterus; any adnexal tenderness or masses; cervical excitation tenderness

- **Investigations**
  - Blood loss diaries can be helpful (frequency of changing, pictorial scales of protection staining)
  - Bloods: FBC for anaemia; coag screen; TFT and FSH levels if clinically indicated
  - TV USS: to assess uterine architecture and endometrial thickness and wall thickness (for excluding pregnancy)
  - Hysteroscopy: to further assess uterine architecture and endometrium if there is intermenstrual bleeding, if USS shows abnormalities or if the problem is resistant to standard treatments
  - Endometrial sampling: all women aged >40 with menorrhagia require screening for endometrial cancer (1% risk) – this can be taken as an outpatient Pipelle biopsy or during hysteroscopy

- **Management**
  - Treat any underlying pathology e.g. fibroids, endometriosis, polyps, malignancy, infection
  - Manage anaemia with iron supplements
  - **Non-hormonal methods**
    - Mefenamic acid: a prostaglandin synthetase inhibitor which binds to COX-1 and COX-2 to ↓↓ prostaglandin synthesis. This reduces pain and inflammation. It also promotes platelet aggregation and vasoconstriction, which reduces bleeding by up to 25%
    - GI upset (take with food), rash, peptic ulceration, nephrotoxicity
    - Tranexamic acid: an antifibrinolytic agent which inhibits the activation of plasminogen. This inhibits the fibrinolytic system and suppresses the breakdown of clots. This allows coagulation to proceed unhindered, and can reduce bleeding by up to 50%
    - GI upset, leg cramps, rash, ↑↑ risk of clots, loss of colour vision
  - **Hormonal methods** (see contraception notes for details)
    - OCP: can provide a 20-30% reduction in blood loss, alongside reducing dysmenorrhoea and regulating the menstrual cycle.
    - Oral progestogens: can help regulate cycle but have little impact on blood loss.
    - Intrauterine progestogens (Mirena IUS): induces endometrial atrophy, which reduces blood loss by up to 90% and causes total amenorrhoea in 30% of patients.
    - HRT: may be appropriate if the patient is perimenopausal.
    - GnRH analogues (e.g. goserelin): can induce a medical menopausal state quickly, but are unpleasant and due to side effects can only be taken for a maximum of 12 months.
  - **Surgical methods**
    - Endometrial ablation (e.g. Novasure): obliterates the endometrium to minimise menstrual loss. 80-90% of patients are significantly improved, and 30% will have amenorrhoea. However, problems can recur and 20% need further Tx within 5 years.
    - Hysterectomy: the only guaranteed cure for menorrhagia, but also the most invasive. Operative complications occur – such as bleeding, infection and injuries to bladder, ureters or bowel – but in <1% of cases, and long-term satisfaction is high. Vaginal hysterectomy is preferred to the abdominal approach, as recovery times are better.