Disorders of the menstrual cycle

Abnormal uterine bleeding (AUB)

Dr Ismaiel Abu Mahfouz
Abnormal uterine bleeding (AUB)

Definition

• Any menstrual bleeding that is either abnormal in volume, regularity, timing, frequency OR
• Non-menstrual uterine bleeding (IMB, PCB, PMB)

AUB should be described according to four specific symptomatic components

• Regularity : irregular, regular or absent
• Frequency : frequent, normal or infrequent
• Duration : prolonged, normal or shortened
• Volume : heavy, normal or light
Prevalence of AUB

- Common & often chronic
- ? debilitating condition
- 14 – 25% of women of reproductive age have AUB
- 5% of women aged 30 – 49 years consult GP each year because of heavy periods
- 12% of gynae referral are for menstrual disorders
## AUB: Terminology

<table>
<thead>
<tr>
<th>Terminology</th>
<th>Description</th>
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<tbody>
<tr>
<td>Abnormal uterine bleeding (AUB)</td>
<td>Any menstrual bleeding that is either abnormal in volume, regularity, timing or is non-menstrual (IMB, PCB, PMB)</td>
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</tbody>
</table>
| Heavy menstrual bleeding (HMB)                   | Subjective diagnosis  
Defined by woman based on how it interferes with her quality of life                                                                 |
<p>| Intermenstrual bleeding (IMB)                    | Uterine bleeding that occurs between clearly defined cyclic and predictable menses                                                       |</p>
<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
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<tbody>
<tr>
<td>Postmenopausal bleeding (PMB)</td>
<td>Genital tract bleeding that recurs in a menopausal woman at least one year after cessation of cycles</td>
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<tr>
<td>Postcoital bleeding (PCB)</td>
<td>Non-menstrual genital tract bleeding immediately (or shortly after) intercourse</td>
</tr>
<tr>
<td>Chronic AUB</td>
<td>AUB has been present for the majority of the past 6 months</td>
</tr>
<tr>
<td>Acute AUB</td>
<td>Excessive bleeding that requires immediate intervention to prevent further blood loss</td>
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<td></td>
<td>May present in the context of existing chronic AUB or might occur without such a history</td>
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<tr>
<td>Other terminology</td>
<td>Description</td>
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<td>-----------------------------------</td>
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<tr>
<td>Menorrhagia</td>
<td>Heavy menstrual bleeding at expected intervals of the menstrual cycle (21 - 35 days)(amount &amp;/or duration)</td>
</tr>
<tr>
<td>Oligomenorrhoea</td>
<td>Bleeding at intervals of &gt;35 days and &lt;6 months, usually caused by a prolonged follicular phase</td>
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<tr>
<td>Polymenorrhoea</td>
<td>Regular bleeding at intervals of &lt; 3 weeks, which may be caused by a luteal phase defect</td>
</tr>
<tr>
<td>Amenorrhoea</td>
<td>No uterine bleeding for at least 6 months</td>
</tr>
<tr>
<td>Menometrorrhagia</td>
<td>HMB at the usual time of menstrual periods and at other irregular intervals</td>
</tr>
<tr>
<td>Metrorrhagia</td>
<td>Uterine bleeding at irregular intervals,</td>
</tr>
<tr>
<td>Dysfunctional uterine bleeding</td>
<td>Ovulatory or anovulatory HMB. Dx by exclusion of pregnancy, medications, iatrogenic causes, genital tract pathology and systemic conditions</td>
</tr>
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</table>
Causes of AUB: FIGO classification

New classification system PALM-COEIN:

- **Structural causes**: PALM
  Measured visually with imaging techniques and/or histopathology
- **Non-structural causes**: COEIN

<table>
<thead>
<tr>
<th>Polyp</th>
<th>Coagulopathy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenomyosis</td>
<td>Ovulatory dysfunction</td>
</tr>
<tr>
<td>Leiomyoma</td>
<td>Endometrial</td>
</tr>
<tr>
<td>Malignancy &amp; hyperplasia</td>
<td>Iatrogenic</td>
</tr>
<tr>
<td></td>
<td>Not yet classified</td>
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</tbody>
</table>
## Non-structural

<table>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>C</strong></td>
</tr>
<tr>
<td><strong>Systemic coagulopathy</strong>, e.g:</td>
</tr>
<tr>
<td>Thrombocytopenia, von Willebrand's disease, leukaemia, warfarin</td>
</tr>
</tbody>
</table>
Heavy menstrual bleeding (HMB) (Menorrhagia)
Heavy menstrual bleeding (HMB)

- Excessive menstrual blood loss that interferes with the physical, social, emotional and/or QoL
- 3% of premenopausal women

Subjective assessment:
- Information of pad usage, flooding, clots, duration
- The woman's personal opinion of her menstrual loss

Objective assessment:
- Does not improve clinical care and is not performed in current clinical practice
Causes of HMB

**PALM**

- P: Polyp (AUB-P)
- A: Adenomyosis (AUB-A)
- L: Leiomyoma (AUB-L)
- M: Malignancy and Hyperplasia (AUB-M)

**COEIN**

- C: Coagulopathy (AUB-C)
- O: Ovulatory dysfunction (AUB-O)
- E: Endometrial (AUB-E)
- I: Iatrogenic (AUB-I)
- N: Not yet classified (AUB-N)
Intermenstrual bleeding (IMB)
IMB: causes

Infection
- Endometritis/ Cervicitis/ Vulvovaginitis

Iatrogenic
- Breakthrough bleeding / Secondary to exam. /smear test

Structural (benign)
- Uterine / cervical polyps or fibroids
- Ectropion

Structural (premalignant / malignant)
- CIN / VIN / VAIV
- Uterine / cervical / vaginal / vulval cancer
- Ovarian estrogen secreting tumours

Natural
- 1–2% of women will have midcycle spotting, associated with ovulation
Polyps

- Localised hyperplastic overgrowths of glands & stroma
- Endometrial or endocervical
- May cause: HMB, PMB, IMB & abnormal vaginal discharge
- Large or multiple are implicated in sub-fertility

Diagnosis

- Clinical (Cervical polyp)
- Ultrasonography (US)
- Sonohysterography (SIS)
- Hysteroscopy or histopathology
Postmenopausal bleeding (PMB)
### Causes of vaginal bleeding in postmenopausal women

<table>
<thead>
<tr>
<th>Cause</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyps</td>
<td>30%</td>
</tr>
<tr>
<td>Submucosal fibroids</td>
<td>20%</td>
</tr>
<tr>
<td>Endometrial atrophy</td>
<td>30%</td>
</tr>
<tr>
<td>Hyperplasia</td>
<td>8–15%</td>
</tr>
<tr>
<td><strong>Endometrial carcinoma</strong></td>
<td><strong>8–10%</strong></td>
</tr>
<tr>
<td>Ovarian, tubal, cervical cancer</td>
<td>2%</td>
</tr>
</tbody>
</table>
Assessment of AUB
Assessment of AUB

- **History:**
  - Chronic AUB (>6 months)
  - Acute AUB (urgent intervention required)

- **Physical examination**

- **Investigations**

- **Management**
Symptoms

General information

- Age (PMB…)
- Menstrual or non-menstrual (IMB, PCB, PMB)
- Subjective assessment of menstrual loss
- Alteration in the menstrual cycle
- Pelvic pain and pressure effects
- Previous medical or surgical treatment for AUB
- Pap smear test
- Family history of gynaecological pathology
Symptoms

Symptoms suggestive of pathology

- Fibroids (pelvic pain / mass, pressure GI / GUT)
- Endometriosis / adenomyosis (chronic pelvic pain, dyspareunia, dysmenorrhoea, sub-fertility)
- STI (Vaginal discharge)
- Inherited or acquired coagulopathy (VWD)
- Medical disease and medications
Symptoms

Identify pathological consequences such as:
- Anaemia (request FBC)
- Pelvic pain
- Impaired QoL

Identify treatment expectations such as:
- Concerns and needs
- Future fertility and contraception wishes
- Need for definitive treatment
History to screen for coagulopathies (AUB-C)

<table>
<thead>
<tr>
<th>Domain</th>
<th>Characteristic</th>
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<tr>
<td>1</td>
<td>Heavy menstrual bleeding since menarche</td>
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</table>
| 2      | One of the following:  
|        | • Postpartum haemorrhage  
|        | • Surgical-related bleeding  
|        | • Bleeding associated with dental work |
| 3      | Two or more of the following symptoms:  
|        | • Bruising 1–2 times per month  
|        | • Epistaxis 1–2 times per month  
|        | • Frequent gum bleeding  
|        | • Family history of bleeding symptoms |
Signs

General examination
- BMI / pallor
- Signs of hypothyroidism
- Bruises or gum bleeding

Abdominal examination
- Look for tenderness or masses
  - Tenderness: endometriosis / pelvic infection
  - Masses: Large fibroids and tumours may present as abdominal masses
Pelvic examination

• **Speculum:**
  - Local cervical or vaginal lesions
  - Assess severity of blood loss
  - ? Consider Pap smear

• **Bimanual examination:** uterine size, shape, tenderness & mobility
  - Enlarged uterus: fibroids / adenomyosis
  - Restricted mobility: endometriosis / infection causing adhesion
  - Tenderness: adenomyosis / endometriosis / PID
Investigations

- Exclude pregnancy
- CBC
- TFTs
- Clotting screens (not routine)
- Cervical smears
- STI screen including Chlamydia
- Imaging studies
- Endometrial biopsy to exclude hyperplasia or cancer
Imaging studies

Trans-vaginal ultrasound scan (TV scan)
- Identify fibroids
- Identify polyps
- Measuring endometrial thickness

Saline sonohystrography
Imaging studies
Saline infusion sonography (SIS)

Visualisation of endometrial pathology
Endometrial sampling

- Office based (Pipelle)
- D&C
- Hysteroscopy
Hysteroscopy
Treatment of AUB

General principles

• Identify underlying cause(s)
• Exclude serious causes
• Consider women’s fertility plans
• Stepwise approach to treatment
Treatment; Medical

Hormonal
- **Mirena IUS**
  - Levonorgestrel
  - Causes endometrial atrophy
  - Blood loss ↓ by up to 90%
  - 30% will be amenorrhoeic at 12 months
  - Provides contraception
  - ↓ in number of hysterectomies
- **Progesterone (Cyclic)**
  - From day 5 to 26 in a cyclical manner
  - From day 15 or 19 to day 26 of the cycle
  - Cyclical progesterone for 21 days
  - Significant reduction in menstrual blood loss
- **Combined oral contraceptive**
Treatment; Medical

Non-hormonal

• **Antifibrinolytics**
  • Tranexamic acid: 1 g tds days 1–4
  • 50% ↓ in blood loss

• **NSAIDS**
  • Mefenamic acid: 500 mg tds days 1–5
  • 30-40% ↓ in loss
  • Significant ↓ in dysmenorrhoea
Treatment; Surgical

Minimally invasive (uterine preserving)
- Endometrial resection
- Endometrial ablation
- Myomectomy in cases of fibroid
- Polypectomy

Hysterectomy
- Laparoscopic
- Open
- Vaginal
Age specific issues in evaluation: Children

If AUB before menarche

• Consider “local” examination? Under GA

DxD:

• Trauma
• Sexual abuse
• Assault
• Congenital malformations
• Malignancy