بسم الله الرحمن الرحيم
DEFINE
Any deviation in normal frequency, duration or amount of menstruation in women of reproductive age.

NORMAL MENSES
Frequency: 21-35 d
Duration: 3-7 d
Volume: 30-80 ml
CAUSES

- Dysfunctional uterine bleeding

- Pregnancy complications:
  Abortion, Ectopic pregnancy, Trophoblastic disease

- Genital disease:

  - Tumors:
    Benign: fibroid, polyps (cervical, endometrial, fibroid)
    Malignant: cervical, endometrial, ovarian
fibroid
• Infection: PID
• Endometriosis, adenomyosis
• IUCD
• Marked uterovaginal prolapse or retroversion
. **Extragenital:**

- **Endocrine:** hypo or hyper thyroidism
- **Haematological:** Idiopathic thrombocytopenic purpura, Von-Willebrand disease
- **Chronic systemic disease:** liver failure, renal failure, hypertension with uterine artery atherosclerosis.
- **Iatrogenic:** Sex hormones, anticoagulants.

- **Emotional:** (change of climate & work; stress; psychosomatic disorders)

- **Obesity:** [increased peripheral estrogen conversion]
CLINICAL TYPES

Polymenorrhoea: frequent (<21 d) menstruation, at regular intervals

Menorrhagia: Excessive (>80 ml) & / or prolonged menstruation, at regular intervals

Metrorrhagia: Excessive (>80 ml) & / or prolonged menstruation at irregular intervals.
**Intermenstual bleeding:** episodes of uterine bleeding between regular menstruations

**Hypomenorrhoea:** scanty menstruation.

**Oligomenorrhea:** infrequent menstruation (>35 d)
Normal Menstrual Cycle

Ovarian cycle:
- Growing follicle
- Ovulation
- Corpus luteum
- Corpus albicans

Body temp.:
- 37°C
- 36°C

Anterior pituitary hormones:
- Luteinizing hormone (LH)
- Follicle-stimulating hormone (FSH)

Ovarian hormones:
- Estradiol
- Progesterone

Uterine cycle:
- Menses
- Follicular phase
- Luteal phase
- Menses

Timeline:
- 0 days
- 14 days (Ovulation)
- 28 days
Dysfunctional Uterine Bleeding
DUB: Abnormal bleeding from the uterus in the absence of organic disease of the genital tract

Commonly applied to bleeding which is excessive either in amount, duration or frequency

OR

Abnormal bleeding from the uterus unassociated with Tumour, inflammation or pregnancy.
• The most common dysfunction is some disorder of the endocrine or vascular mechanism which results in menstruation and the dysfunction may arise in the Endometrium, ovary, pituitary, hypothalamus or higher centres.
AETIOLOGY

Postulated mechanisms in primary DUB

1. Failure in vasoconstriction due to excessive secretion of PGE2 and increase in PGE2 / PGF 2 ratio

2. Failure in formation of adequate thrombotic plugs due to prostacyclin excess.
3. Excessive fibrinolysis with failure in formation of secondary thrombotic plugs
4. ↑ in endometrial lysosomal enzymes with excessive formation of prostanoids
5. Failure in vascular endothelial proliferation due to decreased relaxin
6. Delay in endometrial regeneration
CLINICAL PRESENTATION
DUB by AGE group

1. Adolescent DUD (< 20yrs)
   - Usually anovulatory
     Sometimes may present as transitory oligomenorrhea or transitory irregularity which may be physiological and is a normal process of puberty.
   - May occur as persisting oligomenorrhea, polymenorrhea or menorrhagia
2. Adult (Reproductive age group) DUB (20-40yrs)

Exclude PID, complication of preg

- Bleeding is frequently ovulatory
- Anovulatory bleeding and endometrial hyperplasia occurs in about 20%
- Prognosis in ovulatory bleeding is good with spontaneous cure or remission after curette or hormone therapy
- Prognosis in anovulatory is less favourable
3. Perimenopausal DUB (Over 40yrs)

- Exclude organic disease e.g. Ca of endometrium, and Cervix
- DUB bleeding tends to be Acyclical and over 50% are associated with endometrial hyperplasia
Pathology

**Anovulatory:** with high estrogen & high FSH associated with Cystic glandular hyperplasia

**Ovulatory:** prolonged proliferative phase & short luteal phase
Cystic glandular hyperplasia
Early secretory phase of endometrium
# MECHANISM OF BLEEDING IN DUB

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Mechanism</th>
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</thead>
<tbody>
<tr>
<td>Menorrhagia</td>
<td>abn.PG production, abn.fibrinolysis</td>
</tr>
<tr>
<td>Metrorrhagia</td>
<td>E or P breakthrough bleeding</td>
</tr>
<tr>
<td>Polymenorrhea</td>
<td>short FP or short LP</td>
</tr>
<tr>
<td>Oligomenorrhea</td>
<td>anovulation</td>
</tr>
<tr>
<td>Midcycle bleeding</td>
<td>E withdrawal bleeding</td>
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<tr>
<td>Premenstrual spotting</td>
<td>corpus luteal dysfunction</td>
</tr>
<tr>
<td>Postmenstrual spotting</td>
<td>abn. folliculogenesis</td>
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</table>
Risk of endometrial cancer

Chronic anovulation has 3 times increased risk. Chronic proliferation of the endometrium leading to adenomatous hyperplasia, leading to atypical adenomatous hyperplasia, leading to endometrial carcinoma. Transition can take up to 10 yrs or more.
Diagnosis By
I. History:
1. Personal: age
2. Menstrual
3. Obstetric
4. Past
5. Present: amount, duration, color, smell, relation to sexual intercourse, associated symptoms
# Taking a Menstrual History

## TABLE 1. Eliciting a Menstrual History

<table>
<thead>
<tr>
<th>Age at menarche</th>
<th>Duration of bleeding</th>
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</thead>
<tbody>
<tr>
<td>“Gynecologic age”</td>
<td>Amount of bleeding</td>
</tr>
<tr>
<td>Date of last menstrual period</td>
<td>Pain with bleeding</td>
</tr>
<tr>
<td>Cycle length and regularity</td>
<td>Menstrual history of mother and female siblings</td>
</tr>
</tbody>
</table>
Assessment of the amount of the bleeding: 50% of excessive menstruation have normal amount of blood loss by objective methods

1. Subjective methods: history of passage of clots, flooding, use of large number of pads, do not reflect the actual blood loss

2. Semiobjective:
   i. Iron deficiency anemia
   ii. Menstrual calendar
II. Examination:

1. General: pallor, endocrinopathy, coagulopathy, pregnancy

2. Abdominal: liver, spleen, pelvic abdominal mass

3. Pelvic: origin of the bleeding, cause vaginal examination for married woman
III. Investigations

Systemic:
1. CBC
2. HCG
3. Prolactin & TSH
4. Prothrombin time, partial thromoplastin time, bleeding time, platelets, Von Willebrand factor
Local

1. Endometrial biopsy
2. D & C
3. Hysteroscopy
4. U/S
Endometrial biopsy:

Indications:
. Between 20 & 40
. If endometrial thickness on TVS is >12mm, endometrial sample should be taken to exclude endometrial hyperplasia.

Aim:
diagnosis of the type of the bleeding
Methods: As an outpatient procedure, without general anesthesia.

1. Pipelle curette
2. Sharman curette
3. Accrette
4. Vabra aspirator

Advantages: An adequate & acceptable screening procedure in females under 40 yrs
D & C:
Indications:
1. Mandatory after 40 yrs
2. Persistent or recurrent bleeding between 20 & 40 yrs
Aim:
1. Diagnosis of organic disease e.g. endometritis, polyp, carcinoma, TB, fibroid
2. Diagnosis of the type of the endometrium: hyperplastic, proliferative, secretory, shedding, atrophic. This provides a guide to etiology & treatment
3. Arrest of the bleeding, if the bleeding is severe or persistent, particularly hyperplastic endometrium.

**Disadvantages:**
1. Small lesions can be missed
2. The sensitivity of detecting intrauterine pathology is only 65%
Fractional curettage:

**Indication:** >40 yrs

**Method:** 3 samples: endocervical, lower segment & upper segment
Hysteroscopy:

Indications:

Mandatory after 40 yrs
1. Erratic menstrual bleeding
2. Failed medical treatment
3. TV-us suggestive of intrauterine pathology e.g. polyp, fibroid
Aim:
1. Excellent view of the uterine cavity & diagnosis of polyps, submucous fibroid, hyperplasia.
2. Biopsy of the suspected areas
3. Treatment
Advantages over D & C

1. The whole uterine cavity can be visualized
2. Very small lesions such as polyps can be identified & biopsed or removed
3. Bleeding from ruptured venules & echymoses can be readily identified
4. The sensitivity in detecting intrauterine pathology is 98%
5. Outpatient procedure
Disadvantages:

1. Cost of the apparatus
2. Lack of availability or experience
Hysteroscope:
The hysteroscope is introduced through the cervical canal and into the uterus. No incision is necessary.
Ultrasonography:

1. **TA-US**: can exclude pelvic masses, pregnancy complications
2. **TV-US**: More informative than TAS.
3. **Saline sonography**: an alternative to office hysteroscopy in selected cases.
   It is better tolerated than office hysteroscopy.
Treatment

A. General

1. Menstrual calendar
2. Treatment of iron deficiency anemia
B. Medical

I. Hormonal:
1. Progestagen
2. Oestrogen
3. COCP
4. Danazol
5. GnRH agonist
6. Levo-nova (Merina)

II. Non-hormonal
1. Prostaglandin synthetase inhibitors (PSI)
2. Antifibrinolytics
3. Ethamsylate
Treatment

- Treat the cause.
- 3 groups of patients with DUB:
  - Less than 20 years old.
  - More than 40 years old.
  - Between 20 and 40 years old.
• **Less than 20 years old:**

  »» So the treatment is simple and for short duration (few months) till the hormonal axis becomes mature.

• **Lines of management:**

  » Reassurance and explanation.
  » Correction of anemia if present.
  » Medical treatment.
Medical treatment:

A- Non-Hormonal drugs:

1- **Anti-PG**: Is the most commonly used.

   »» Mefenamic acid (Ponstan):

   - Is the most common drug used by adolescent female; for dysmenorrhea as well.
   - 500mg daily, from day 1 to day 5 of the cycle.
   - It decreases menstrual blood loss by 25%.
   - Side effects: gastritis, gastric ulcer.
2-Antifibrinolytic:

Tranexamic acid:
- 1-1,5mg daily, from day 1 to day 5 of the cycle.
- It decreases menstrual blood loss by 50%.
- Main side effects; nausea and vomiting
  - is contraindicated in patient with risk factor for thromboembolism.
B- Hormonal Drugs:

1-Progestogens:

Norethisterone and Medoxyprogesterone acetate.

- It is the most common drug used for DUB.
- 5 mg twice daily, from day 5 to day 25 of the cycle.
- It decreases menstrual blood loss by 25%.
2- Combined oral contraceptive pill:
   - usual contraceptive regimen for 21 days, from day 5.
   - It decreases menstrual blood loss by 50%.
   - Less commonly used due to its side effects.

   - Major side effects: HT, thromboembolism, cardiovascular…
3- Danazol:
   - It is an androgen analogue
   - Also, has antiestrogentic & antiprogestrogenic.
     and has suppressive effect on endometrium.
   - Decreases menstrual blood loss by 80-100%

- Side effects:
  » Hoarseness of voice.
  » Hirsutism and acne
  » Breast atrophy.
  » Hypooestrogenic: Menopausal symptoms
4- GnRH analogues:

- 3.75mg IM monthly, for 4 m-
- Decreases Menstrual blood loss by 80-100%
- Depression of the HPO- axis;
- has menopausal symptoms
- Major risk: Osteoporosis if used more 6 months.
**Between 20 & 40 years old:**

**Two lines of management:**

- **Medical:** same as for the teenagers

- **Levonorgestrol releasing IUCD (Mirena):**
  - If they desire contraception; very effective
  - 20 Mg of levonorgestrol daily.
  - It decreases menstrual blood loss by 80-100%
  - ~30% of women are amenorrhoeic after one year of insertion
- It decreases the incidence of PID.
- Doesn’t increase risk of ectopic pregnancy.
- Side effects: irregular bleeding & spotting for the first 3-6 months after insertion
• Above the age of 40 years old:

* Three lines of management:
  »» Medical: Same
  »» Mirena: Safely used.
  »» Surgery
* Endometrial resection and ablation

* Hysterectomy.
C. Surgical

1. D&C
2. Endometrial ablation
3. Hysterectomy
Surgical treatment

Endometrial ablation

Methods:

I. Hysteroscopic:
1. Laser
2. Electrosurgical: a. Roller ball  
    b. Resection

II. Non-hysteroscopic:
1. Thermachoice
2. Microwave.
Indications:

1. Failure of medical treatment
2. Family is completed
3. Uterine cavity <10 cm
4. Submucous fibroid <5 cm
5. Endometrium is normal or low risk hyperplasia.
Complications of hysteroscopic methods

1. Uterine perforation
2. Bleeding
3. Infection.
4. Fluid overload
5. Gas embolism
Hysterectomy

Indications:
1. Failure of medical treatment
2. Family is completed
3. age >40

Routes:
1. Abdominal
2. Vaginal
3. Laparoscopic
Thank you