# MENSTRUAL DISORDERS

DR GREGORY HALLE
Gynaecologist - Obstetrician
General Hospital Douala

Postgraduate Training in Reproductive Health Research
Faculty of Medicine, University of Yaoundé 2007

# NORMAL MENSTRUATION

- Cyle length: marked variability in women not using oral contraceptives.
- $5^{th}$-$95^{th}$ centile being 23 – 39.4 days.
- Mean duration 29.6 days.
- Cycle length decreases with advancing age.
- Abnormal menstruation: bleeding at any time outside normal menstruation and any variation outside the defined limits.
- Acyclical bleeding – pre or postmenopausal bleeding.

# NORMAL MENSTRUATION

- Duration of menstrual blood loss: 2-7 days, mean of 5 days.
- Excessive menstruation >7 days.
- Blood loss: difficult to evaluate.
- Racial differences.
- Average blood loss 40cc: 90% occurs 1-3 days.
- Pathological >80cc.
- Critical appraisal of menstrual blood loss is uncertain because of underestimation by some patients.

# NORMAL MENSTRUATION

- 50–75% of menstrual flow is blood, the rest is made up of fragments of endometrial tissue and mucus.
- Menstrual blood does not clot – Aggregation of endometrial tissue, red blood cells, degenerated platelets and fibrin.
- Endometrium contains large amounts of fibrin degradation products.
- When blood loss is excessive, lytic substances that are rapidly consumed lead to the presence of clots in menstrual flow – Excessive menstrual blood flow.

# NORMAL MENSTRUATION ROLE OF EICOSANOIDS

- Prostanoids are not stored but are synthesized in tissues as required.
- Prostaglandins PGF2alpha , PGE2, prostacylin(PGI2), thromboxane(TxA2) and leukotrienes all play an important role in menstruation.
- Phospholipids are released from cell membranes and converted to arachidonic acid by phospholipase A2. Cyclo-oxygenase converts arachidonic acid to unstable endoperoxides (PGG3 and PGH2) which are rapidly converted to by specific synthetases into:
  - PG2 alpha - potent vasoconstrictor and weakly platelet antiaggregatory.
  - PGI2 – potent vaso-dilator and weakly platelet antiaggregatory.
  - PGD2 – platelet aggregation inhibitor.
  - Thromboxane – potent vasoconstrictor and platelet inhibitor.
- Prostanoids are thought to act at their site of synthesis.

# ABNORMAl MENSTRUATION

- Menorrhagia (hypermenorrhea): uterine bleeding excessive in both amount and duration of flow, but occurring at regular intervals.
- Oligomenorrhea: menstrual periods at intervals of more than 35 days.
- Menometrorrhagia: uterine bleeding usually excessive and prolonged occurring at frequent and irregular intervals.
- Polymenorrhea: frequent but regular episodes of uterine bleeding occurring at intervals of 21 days or less.
- Metrorrhagia: uterine bleeding occurring at irregular intervals.
- Hypomenorrhea: uterine bleeding that is regular but decreased in amount.
- Intermenstrual bleeding: uterine bleeding, usually not excessive, occurring at any time during the menstrual cycle other than during normal menstruation.

# Dysfunctional uterine bleeding (anovulatory bleeding)

- Blood flow is usually excessive in duration, amount and frequency.
- More common during the perimenarcheal and perimenopausal years.
- Usually episodes are transient and self limiting.
- During the reproductive years many factors might disrupt and interrupt ovulation.
- Causes for disturbed function can be central, intermediate, end organ, and physiologic.

# Etiologic classification of anovulatory bleeding

- Central causes: immaturity of the hypothalamic-pituitary axis; functional or chronic diseases; traumatic, toxic, and infectious lesions; polycystic ovarian disease.
- Pychological factors: anxiety, stress, emotional trauma; psychotrophic drugs, drug addiction, exogenous steroid administration.
- Intermediate causes: chronic illness, metabolic or endocrine diseases, nutritional disturbances.
- Peripheral causes: functional ovarian cyst, functional tumors, premature ovarian failure.
- Physiologic: perimenarcheal and perimenopausal.

# Perimenarcheal dysfunctional uterine bleeding (DUB)

- Adolescent DUB is primarily due to delayed, asynchronous or abnormal hypothalamic maturation and inadequate positive feedback.
- Usually associated with oligomenorrhoea, polymenorrhea or some irregularity of menstruation due to delayed or failed ovulation with a failed luteal phase support.
- Uterine bleeding is occasionally severe and prolonged leading to severe anaemia especially in truely anovulatory cycles.
- In cases where this persists the existence of PCO must be excluded and the teenager treated with cyclic hormones or oral contraceptives.

# Menstrual disorders Reproductive Age

- In the reproductive age, psychologic causes of menstrual disorers involve marital and sex life, a detailed history might reveal significant events that precedes anovulatory episodes.
- History of broken relationships, alcoholism or drug addiction and school or social pressures.
- Polycystic ovarian syndrome common finding: obesity, hirsutism, anovulatory cycles (failure of follicular development), endometrial hyperplasia.

# Abnormal vaginal bleeding Reproductive age

- Vaginal and vulvar injury: post traumatic/sexual abuse.
- Haematuria/rectal bleeding - sometimes mistaken for vaginal bleeding.
- Cervicitis, vaginal and cervical polyps, cervical cancer.
- Endometrial hyperplasia, uterine polyps, endometrial cancer, uterine fibroids.
- Primary ovarian defects, ovarian cysts (functional), ovarian tumors.
- Hormonal disorders: hyper or hypothyroidism, Cushing syndrome, diabetes.
- Nutritional disturbances: malnutrition and vitamin deficiencies.
- Other diseases: chronic renal failure.

# Menstrual disorders Reproductive age

- Excessive regular cyclical bleeding or menorrhagia.
  - Frequently due to benign organic disease of the reproductive tract such as fibromyomas or pelvic inflammatory disease.
  - Can also be dysfunctional.
  - Rarely associated with malignancy.

# Menstrual disorders Reproductive age

- Irregular or acyclical bleeding (metrorrhagia)
  - Usually suggestive of organic disease: carcinoma of the cervix or endometrium.
  - Frequently dysfunctional (anovulatory cycles).

# Menstrual disorders during perimenopause

- Menstrual dysfunction is usually associated with a failing ovarian function.
- Characterised by an increasing interval between menses. Some cycles are however ovulatory.
- Gonadotrophin levels especially FSH are usually elevated, when they return to normal values occasionally ovulation occurs.

# Abnormal bleeding
# Postmenopausal bleeding.

- Bleeding from the genital tract 12 months after the cessation of menses. It requires prompt evaluation and management.
- Causes: hypoestrogenism, HRT, vaginal and endometrial atrophy, vaginal, cervical and uterine cancers, urethral caruncle, cervical polyps, uterine fibroids.
- Vulvar tumors, vulvovaginitis.
- Differential diagnosis: causes of bladder and rectal bleeding which can be confused with vaginal bleeding.

# Vaginal bleeding Postcoital

- Vaginal infection.
- STI's: chlamydia, gonorrhoea.
- Rough sex.
- Male penile bleeding: blood might come from the man rather than the woman.
- Haemospermia.
- Cervicitis, cervical polyps, cervical cancer.
- Blood disorders.
- Uterine cancers.

# Vaginal bleeding
# Drugs

- Certain drugs and medications can cause vaginal bleeding.
- Oral contraceptives(starting or stopping).
- Progestogen withdrawal therapy, especially when heavy doses are used.
- Oestrogen therapy (onset or withdrawal).
- Herbal or alternative supplements.

# Abnormal vaginal bleeding Diagnosis

- History: Age, parity and fertility. Amount, duration and pattern of bleeding;and associated gynaecological problems, including infertility or perimenopausal symptoms.
- Symptoms suggestive of bleeding disorders; von Willebrandt disease, myxoedema, thyrotoxicosis, Cushing disease, renal failure, etc.
- Patient's plans and wishes: contraception, future pregnancies, possible hysterectomy.

# Abnormal vaginal bleeding Diagnosis

- General examination (to exclude other diseases), abdominal and pelvic examination essential (exclude pelvic masses).
- Investigations: transvaginal ultrasound.
- D/C: mainly diagnostic but can also be therapeutic.

# Abnormal vaginal bleeding Diagnosis

- ‘D’ and ‘C’: exclude uterine pathology (endometrial polyps, hyperplasia, endometriosis, tuberculosis).
- Functional state of the endometrium: proliferative or secretory, irregular shedding or atrophy.
- Hysteroscopy or microhysteroscopy without anaesthesia: permits visualisation of the uterine cavity.
- Sensitivity in detecting uterine pathology 95% compared to 65% ‘D’ and ‘C’.

# Abnormal vaginal bleeding Diagnosis

- Endometrial biopsies: suction aspirators, pipettes. Short comings: small samples thus polyps and fibromyomas might be missed.
- Haematological investigations especially in cases of DUB: FBC, platelet count, clotting profile, bleeding time, clotting factors.
- Hormonal profile.
- Laparoscopy: pelvic tumors, PID.

# Principles of management

- General measures in cases of severe bleeding: admission and surveillance (vital signs, urinary output, central venous pressure).
- Intravenous infusions: saline, plasma expanders, blood transfusion.
- Blood samples: FBC, blood group, platelet count, bleeding time, clotting time, blood sugar, renal and liver function tests based on suspected pathology,
- Ultrasound: pregnancy related complications and abdominopelvic masses.

# Principles of management

- Two goals in management especially when menstrual bleeding is associated with profuse blood loss:
  - Control of acute bleeding episode and prevention of recurrence.
  - Treat patients symptomatically while primary cause of menstrual disorder is being investigated.
- Menstrual calender: duration, amount, regularity.
- Supplements of iron.
- Life threatening blood loss with transfusion: rare.

# Management of chronic menstrual disorders

- Four alternatives:
  - Observation.
  - Cyclical progestational agents.
  - Oral contraceptives.
  - Ovulation induction with clomiphene citrate (infertility treatment).

# Principles of management

- Specific treatment: it depends on the cause of the menstrual disorder.
- Tamponage: vaginal and cervical lesions.
- ‘D’and ‘C’: incomplete abortion, retained placenta (PPH), endometrial hyperplasia, polyps.
- Drugs: oral contraceptives (DUB), antibiotics (PID), GnRH analogues.

# Specific management

- Endometrial ablation/resection: endometrial hyperplasia.
- Myomectomy, hysterectomy, uterine artery embolisation: uterine fibroids.
- Extensive surgery: ovarian, uterine, cervical cancers.
- Chemotherapy/radiotherapy for advanced cervical and ovarian neoplasias.

# Conclusion

- Menstrual disorder is a common complaint. Specific pathologies are associated with its occurrence in different age groups (pubertal years, reproductive age and perimenopausal period).
- Requires proper evaluation so that the underlying pathology can be diagnosed and specific treatment instituted.
- Treatment might range from reassuring patients (mild DUB in pubertal girls) to mutilating surgery (in cases of advanced cancers).

# Thanks for your attention.