# Abnormal uterine bleeding and dysmenorrhea

In the 18 to 24 months following first menstruations, the cycles are often irregular, because of anovulation. Even after five years, still 10-20% of cycles are anovulatory. If menarche (first menses) was early (before 12 years of age), more cycles will be ovulatory.

Normal cycles are from 21 to 40 days and menstruations last 2 to 8 days. Normal cycles are dependant upon the integrity of hypothalamus, hypophysis, ovaries and uterus.

## Abnormal uterine bleeding

Bleeding that occurs at intervals of less than 21 days or more than 40 days, last longer than 7 days, or involves blood loss greater than 80 ml is considered abnormal. This is a common problem. The girl has irregular menses and the menstrual flow can be heavy and last longer. Most adolescent girls with abnormal uterine bleeding appear to have delayed maturation of the normal menstrual cycle mechanism (hypothalamo-pituitary-ovarian axis), leading to anovulatory cycles. This condition is called dysfunctional uterine bleeding. Girls with other conditions that stop ovulation may also be likely to present with dysfunctional uterine bleeding: eating disorders, exercise, chronic diseases, stress, drug abuse, endocrine disorders. However, it is not all girls with anovulatory cycles who will present with abnormal bleeding. In the 10-20 year old group, only 9% of abnormal uterine bleeding are due to organic lesions. This figure is higher in girls hospitalized for abnormal uterine bleeding, especially if Hb was below 10.

### *Definitions*

Dysfunctional uterine bleeding: no demonstrable organic lesions
Polymenorrhea: bleeding at regular interval of less than 21 days
Hypermenorrhea or menorrhagia: prolonged or excessive uterine bleeding at regular intervals
Metrorrhagia: uterine bleeding at irregular intervals
Menometrorrhagia: prolonged and excessive bleeding at irregular intervals
Oligomenorrhea: bleeding where the intervals varies from 40 days to 6 months
Amenorrhea: absence of menses for 6 months or for more than 3 of the patient's normal cycles.

### *Differential diagnosis*

- Anovulation
- Coagulations disorders: thrombocytopenic purpura, thalassemia major, platelet defects, Von Willebrand's disease
- Gynecologic lesions/syndromes and malignancies: cervical/endometrial polyps, myoma, vaginal adenosis, trauma, foreign bodies, hemangiomas, ovarian cyst and tumor, polycystic ovarian syndrome, endometriosis.
- Pregnancy complications: threatened abortion, ectopic pregnancy, retained product of conception
- Infections: pelvic Inflamatory disease, endometritis, cervicitis, vaginitis
- Systemic/endocrine disease: diabetes, adrenal disorders, thyroid, hepatic or renal dysfunction, hyperprolactinemia

- Iatrogenic/medications: Intra Uterine Device, use of oral contraceptives, anabolizing steroids, aspirin, seizure medications, anticoagulants, exogenous hormones, antineoplastic drugs

Despite the many possibilities, the usual diagnosis in adolescent girls remains anovulation. The most common cause of anovulation in adolescent girls is hypothalamic-pituitary-ovarian axis immaturity. However, as mentioned, hypothalamic dysfunction is also associated with many factors: stress, weight loss, systemic diseases, exercise. Primary coagulation disorders is the most prevalent organic cause of abnormal uterine bleeding. Other organic causes of abnormal uterine bleeding in the adolescent include: ectopic pregnancy, threatened abortion, endometritis, intra-uterine device, oral contraceptives.

## *Differential diagnosis regarding cyclicity of bleeding*

Cyclic bleeding with heavy menstruation: blood dyscrasia, or uterine abnormality.

Cyclic bleeding with abnormal bleeding throughout the cycle: foreign body, trauma, uterine polyp, congenital malformation of uterus with obstruction, infection, endometriosis.

Non-cyclic: disorders associated with anovulation: normal (first few years after menarche), polycystic ovary syndrome, ovarian failure, endocrine problems, anorexia nervosa, exercise.

## *Evaluation*

Inquire about: age of menarche, menstrual pattern, duration, color and quantity of flow, blood clots, dysmenorrhea, menstrual calendar, use of tampon, sexual activity, foreign body, IUD, oral contraceptives, bleeding after intercourse, STD, stresses, anorexia, exercise, bleeding disorders, chronic diseases, substance abuse and medications, headaches, gastro-intestinal symptoms, endocrine disorders...

Examination: height, weight, signs of Turner or Cushing, signs of hyperandrogenism, blood pressure, thyroid, galactorrhea, petechiae, exam of vagina for foreign body, polyp, infection... If the teen is not sexually active, the pelvic examination is not necessary.

Laboratory tests: endocervix culture and pap smear for the sexually active, complete blood count, pregnancy test, if necessary: liver function, thyroid, coagulation tests (blleding time to rule out Von Willerbrand disease).

## *Treatment of dysfunctional uterine bleeding*

1) If bleeding is not excessive (Hb > 11gm/dl):

- Provera 10 mg/day for 10 to 14 days or
- Oral contraceptives (50 mcg estrogens) for 1-3 months or
- Premarin 2.5 mg 4 times/day for 21 days, plus provera 10mg/day on days 17-21

Menstrual calendar, monitor iron status (can give iron supplement), follow-up after 2 months.

2) If bleeding more excessive (Hb 9-11 gm/dl):

- Oral contraceptives (35 mcg estrogens): 4 pills/day for 4 days, 3 pills/day for 4 days, 2 pills/day for 15 days, withdrawal bleeding for 7 days. (or 50 mcg estrogens, 2 pills per day for 4 days, one pill per day for 17 days, withdrawal bleeding for 7 days).
- Iron supplement.
- Then oral contraceptives (35 mcg estrogens) for 3 months. If breakthrough bleeding, increase estrogen to 50 mcg.

3) If bleeding profuse (Hb < 9 gm/dl)

- If needed: blood transfusion
- Premarin 25 mg Iv q. 4-6 hrs for 24 hrs or until bleeding stops; antiemetic
- Begin oral contraceptives (35 mcg estrogens): 4 pills/day for 4 days, 3 pills/day for 4 days, 2 pills/day for 15 days, withdrawal bleeding for 7 days. (or 50 mcg estrogens, 2 pills per day for 7 days, one pill per day for 14 days, withdrawal bleeding for 7 days).
- Iron supplement.
- Then oral contraceptives (50 mcg estrogens) for 3 months.

## Dysmenorrhea

60% of girls will complain of some degree of pain during menstruation. It is the main cause of school absences of girls. About 14% of dysmenorrheic girls miss school.

### *Primary*

Here, there is no evidence of organic pelvic disease or problem. It may start 1-2 days before menstruation and continue 2-4 days during menstruation. Sometimes, the dysmenorrheic girls have anovulatory, heavy bleeding. Usually cycles are ovulatory and primary dysmenorrhea appears after 6 to 12 months of menstruation in girls under 20 years of age. Primary dysmenorrhea is related to prostaglandins released during menses; prostaglandins produce contraction of uterine muscles; girls with dysmenorrhea have higher levels of prostaglandins.

Sometimes there are premenstrual syndrome and systemic symptoms (50%): nausea, dizziness, headache, weight gain, breast soreness, diarrhea, hot flashes, urinary frequency, mood changes.

### *Secondary*

Some of the causes are: uterine anomaly (such as a polyp, two horns), endometriosis, endometritis and pelvic inflammatory disease, the presence of an IUD, ovarian cyst, adhesions.

Endometriosis is not common in adolescents. The symptoms include chronic pelvic pain, abnormal uterine bleeding, pain on defecation, dyspareunia.

## *Evaluation*

History: menstrual history (regular cycles), age of menarche; possible STD, gastro-intestinal and genito-urinary symptoms (cystitis, irritable bowel...)

Physical examination: evidence of endometriosis, endometritis, polyp, uterine abnormality. If teen not sexually active and history typical, no pelvic examination.

## *Treatment*

When no specific causes are found, the use of anti-inflammatory medication is helpful: anaprox, 550 mgs two times a day, or 275 mgs 3-4 times a day; motrin, 400 mgs three times a day; naprosyn, 500 mgs two times a day or 250 mgs four times a day; orudis (ketoprofen), 75 mgs three times a day. The drug should be tried for 3 to 4 cycles before being judged ineffective. The medication can be started the day before the menstruation starts and continued for 2-3 days, on a regular basis, not waiting for the pain to come back to take another pill. Oral contraceptives are also successful in relieving menstrual cramps.