

# WOMEN'S HEALTH

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Dysmenorrhea

Abnormal  
Uterine  
Bleeding

Contraception

# Learning Objectives

- To manage patients presenting with dysmenorrhea.
- To manage patients presenting with abnormal uterine bleeding.
- To provide proper counseling regarding contraceptive methods.

# DYSMENORRHEA

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# Definition & Burden

- Dysmenorrhea is a painful menstruation that starts before or with the onset of menstrual bleeding and gradually decrease over 8-72 hours.
- Affects around 50% to 90% of adolescent girls and women of reproductive age group.
- Dysmenorrhea leads to decreased quality of life, absenteeism (school/work/sports activities), and increased risk of depression and anxiety.
- Most women with dysmenorrhea continue to have persistent symptoms throughout their years of menstruation.

# Classification

## ■ Primary dysmenorrhea

- Defined as painful menstruation in the absence of a pelvic pathology.
- Mediated by elevated prostaglandin and leukotriene levels, with inflammation causing uterine contractility and cramping pain.
- Usually occurs within 6 to 12 months after menarche.

## ■ Secondary dysmenorrhea

- Characterized by new onset of pain or worsening of usual pain.
- May start immediately following menarche or may arise later in life.
- Accounts for 10% of cases of dysmenorrhea.
- Due to a pelvic pathology or a recognized medical condition.

# Causes of Secondary Dysmenorrhea

Gynecologic	Non-Gynecologic
<ul style="list-style-type: none"><li>▪ <b>Endometriosis</b></li><li>▪ Adenomyosis</li><li>▪ Fibroids</li><li>▪ Ovarian cysts</li><li>▪ Intrauterine or pelvic adhesions</li><li>▪ Chronic pelvic inflammatory disease</li><li>▪ Obstructive endometrial polyps</li><li>▪ Congenital obstructive Mullerian malformations</li><li>▪ Cervical stenosis</li><li>▪ Use of an intrauterine device</li><li>▪ Pelvic congestion syndrome</li></ul>	<ul style="list-style-type: none"><li>▪ Inflammatory bowel disease</li><li>▪ Irritable bowel syndrome</li><li>▪ Uteropelvic junctional obstruction</li><li>▪ Psychogenic disorders</li></ul>

# Risk and Protective Factors

Risk Factors	Protective Factors
<ul style="list-style-type: none"><li>▪ Age &lt; 30 years</li><li>▪ BMI &lt; 20 kg/m<sup>2</sup></li><li>▪ Smoking</li><li>▪ Early menarche (younger than 12 years)</li><li>▪ Longer menstrual cycles</li><li>▪ Heavy menstrual flow</li><li>▪ History of sexual abuse</li><li>▪ Nulliparity</li><li>▪ Premenstrual syndrome</li><li>▪ History of pelvic inflammatory disease.</li></ul>	<ul style="list-style-type: none"><li>▪ Increasing age</li><li>▪ Increasing parity</li><li>▪ Exercise</li><li>▪ Oral contraceptive use</li></ul>

# Clinical Presentation

- Pain (cramps) in the lower abdomen or back pain.
- Associated symptoms: nausea, vomiting, diarrhea, headaches, muscle cramps, low back pain, fatigue, sleep disturbance (in very severe cases).
- Symptoms suggestive of secondary dysmenorrhea:
  - Dysmenorrhea beginning in the 20s or 30s, after previous relatively painless cycles
  - Changes in or progressive worsening of pelvic pain
  - Heavy menstrual flow or irregular bleeding
  - Dysmenorrhea occurring during the first or second cycles after menarche
  - Pelvic abnormality with physical examination
  - Poor response to nonsteroidal anti-inflammatory drugs (NSAIDs) or oral contraceptives
  - Infertility
  - Dyspareunia
  - Vaginal discharge

# APPROACH TO PATIENT PRESENTING WITH DYSMENORRHEA

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# History

Category	Details
Menstrual history	Age at menarche- Duration of menstrual bleeding- Menstrual flow assessment- Interval between menstrual periods
Symptom history	Initial onset of symptoms and progression over time- Relation of symptoms to periods- Presence or absence of nausea, vomiting, diarrhea, back pain, dizziness, fatigue, and headache during menstruation- Impact of symptoms on daily activities such as school attendance, sports participation, and other activities- Medication use (Type, dose, and timing in relation to the onset of cramps and perceived effectiveness in terms of pain relief and ability to engage in all daily activities).
Sexual history	Current sexual activity and type of contraception used- History of sexually transmitted infections and history of pelvic inflammatory disease
Other	Family history- surgical history- known medical problems (inflammatory bowel disease, irritable bowel syndrome, psychogenic disorders).

## Verbal multidimensional scoring system for assessment of dysmenorrhea

Grade	Working ability	Systemic symptoms	Analgesics
Grade 0: Menstruation is not painful and daily activity is unaffected	Unaffected	None	None required
Grade 1: Menstruation is painful but seldom inhibits normal activity; analgesics are seldom required; mild pain	Rarely affected	None	Rarely required
Grade 2: Daily activity is affected; analgesics required and give sufficient relief so that absence from school is unusual; moderate pain	Moderately affected	Few	Required
Grade 3: Activity clearly inhibited; poor effect of analgesics; vegetative symptoms (headache, fatigue, vomiting, and diarrhea); severe pain	Clearly inhibited	Apparent	Poor effect

*Adapted from Andersch B, Milsom I. An epidemiologic study of young women with dysmenorrhea. Am J Obstet Gynecol 1982; 144:655.*

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# Physical Examination

- General physical examination
  - Abdominal examination is usually unremarkable if patient is not menstruating or with generalized lower abdominal tenderness during menses (in primary dysmenorrhea).
- Pelvic examination
  - not necessary in patients presenting with symptoms consistent with primary dysmenorrhea.
  - should be done in females who have had vaginal intercourse ( high risk of pelvic inflammatory diseases) or if endometriosis is suspected.

# Diagnosis/Workup of Dysmenorrhea

- Diagnosis of primary dysmenorrhea is based on clinical history and physical examination. No specific tests are needed.
- Additional tests might be needed if secondary dysmenorrhea is suspected.
  - Laboratory tests: CBC, ESR, Urinalysis, Stool guaiac, quantitative human chorionic gonadotropin level, Gonococcal and chlamydial cultures.
  - Imaging: Abdominal or transvaginal ultrasonography, Hysterosalpingography, Intravenous pyelography, Computed tomography, Magnetic resonance imaging.
  - Other invasive tests: Laparoscopy, Hysteroscopy, Dilatation and curettage.

# MANAGEMENT

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# Non-Pharmacologic Therapies

Exercise	Heat
<ul style="list-style-type: none"><li>▪ The body of evidence supports a role for exercise in the treatment of dysmenorrhea.</li><li>▪ Reduces intensity and duration of pain in primary dysmenorrhea.</li><li>▪ Optimal type, duration, and frequency of exercise not known.<ul style="list-style-type: none"><li>○ goal of achieving 45 to 60 minute intervals at least three times per week—may significantly reduce menstrual pain that is associated with moderate to severe dysmenorrhea.</li></ul></li></ul>	<ul style="list-style-type: none"><li>▪ In randomized trials, application of heat to the lower abdomen was effective for relief of dysmenorrhea.</li><li>▪ Heat had similar efficacy as ibuprofen and was more effective than acetaminophen.</li><li>▪ Heat therapy may improve the efficacy of other treatments.</li></ul>

# Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)

- First-line treatment for primary dysmenorrhea.
  - Reduce prostaglandin production.
  - Choice of NSAID should be based on effectiveness and tolerability. No difference in terms of pain relief or safety.
  - Start 1 -2 days before menses, and continue on a fixed schedule for 2-3 days.
  - Commonly prescribed NSAIDs include ibuprofen (800 mg initially, followed by 400 to 800 mg every eight hours) and naproxen (500 mg initially, followed by 250 to 500 mg every 12 hours).
  - 20% of patients report minimal to no relief.
  - Up to 25% to 50% of patients do not take the correct dosage to provide adequate relief.

# Hormonal Therapy

- Alternative to NSAID and considered as a first-line treatment for dysmenorrhea in sexually active women who are not planning to become pregnant.
- It is a second-line treatment in non-sexually active adolescents.
- Improve symptoms of dysmenorrhea by thinning the endometrial lining and reducing cyclooxygenase-2 and prostaglandin production.
- Combined estrogen-progestin oral contraceptives are effective in adolescents and adults with primary dysmenorrhea.
  - No difference in effectiveness between low- and medium-dose estrogen preparations.
  - Continuous combined oral contraceptive regimens with more than 28 days of active hormone may lead to improved and more rapid pain relief but are associated with more weight gain than cyclic regimens.
- Progestin-only oral contraceptives are an alternative for those who are not candidates for estrogen therapy.

# Other Hormonal Therapies

- Transdermal patches
- Vaginal rings
- Progestin implants
- Intramuscular or subcutaneous medroxyprogesterone depot injection
- Levonorgestrel-releasing intrauterine system.
  - A systematic review found that the levonorgestrel-releasing intrauterine system is as effective as, if not superior to, oral contraceptives in the treatment of primary dysmenorrhea and secondary dysmenorrhea caused by endometriosis.

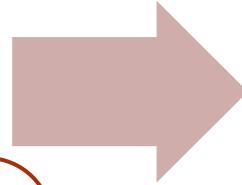
# Other Treatment Modalities

- Behavioral interventions and pain management training, such as progressive muscle relaxation, imagery, and biofeedback, that focus on coping strategies may help with spasmodic-type pain.
- Manual acupuncture and electroacupuncture are effective at reducing menstrual pain compared with no treatment.
- Insufficient evidence to support the use of the dietary supplements fenugreek, fish oil, ginger, valerian, vitamin B1, Zataria multiflora, and zinc sulfate for dysmenorrhea or the use of antioxidants for endometriosis-related pelvic pain.
- High-frequency transcutaneous electrical nerve stimulation is effective for pain reduction in primary dysmenorrhea (when other treatment modalities fail).

# Follow Up

In 2-3 months

- Some pain improvement- Add an additional treatment & continue initial one
- Minimal or no response to treatment – Offer a treatment change to an alternative



After 3 months

- Adequate symptom response – continue treatment.
- No adequate response – need to be re-evaluated for secondary dysmenorrhea

# ABNORMAL UTERINE BLEEDING

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# Characteristics of Normal Menstrual Cycle

- Frequency (interval between the start of each menstrual cycle): Normal 24 to 38 days.
- Duration of menstruation: Normal 4.5 to 8 days
- Regularity: shortest to longest cycle variation is  $\leq 7$  to 9 days.
- Volume (total blood loss each menstrual cycle): Normal 5 to 80 mL

## Normal menstruation parameters

Parameter	Normal	Abnormal
Frequency	$\geq 24$ and $\leq 38$ days	Absent (no bleeding): amenorrhea
		Frequent ( $< 24$ days)
		Infrequent ( $> 38$ days)
Duration	$\leq 8$ days	Prolonged ( $> 8$ days)
Regularity	Regular: shortest to longest cycle variation: $\leq 7$ to 9 days*	Irregular: shortest to longest cycle variation: $\geq 10$ days
Flow volume (patient determined)	Patient considers normal	Patient considers light
		Patient considers heavy
Intermenstrual bleeding (bleeding between cyclically regular onset of menses)	None	Random
		Cyclic (predictable): <ul style="list-style-type: none"> <li>▪ Early cycle</li> <li>▪ Mid cycle</li> <li>▪ Late cycle</li> </ul>
Unscheduled bleeding on progestin±estrogen gonadal steroids (contraceptive pills, rings, patches, IUDs, or injections)	Not applicable for patients not on gonadal steroid medication	Present
	None (for patients on gonadal steroid medication)	

IUDs: intrauterine contraceptive devices.

\* Normal variation depends on age; these data are calculated excluding short and long outliers.

Data from:

1. Fraser IS, Critchley HO, Munro MG, Broder M. A process designed to lead to international agreement on terminologies and definitions used to describe abnormalities of menstrual bleeding. *Fertil Steril* 2007; 87:466.
2. Fraser IS, Critchley HO, Munro MG, Broder M. Can we achieve international agreement on terminologies and definitions used to describe abnormalities of menstrual bleeding? *Hum Reprod* 2007; 22:635.
3. Fraser IS, Munro MG, Broder M, Critchley HO. International recommendations on terminologies and definitions for normal and abnormal uterine bleeding. *Semin Reprod Med* 2011.

# Burden

- Abnormal uterine bleeding is a common condition, with a prevalence of 10% to 30% among women of reproductive age.
- Heavy or prolonged uterine bleeding can result in anemia, interfere with daily activities, and is the most common presenting symptom in patients with endometrial hyperplasia or carcinoma.
- It negatively affects quality of life and is associated with financial loss, decreased productivity, poor health, and increased use of health care resources.

# Definition

- Abnormal uterine bleeding refers to uterine bleeding of abnormal quantity, duration, or schedule.
- It is a symptom, not a diagnosis.
- Used to describe bleeding that falls outside population-based 5th to 95th percentiles for menstrual regularity, frequency, duration, and volume.
- Abnormal bleeding is considered chronic when it has occurred for most of the previous six months, or acute when an episode of heavy bleeding requires immediate intervention.

# Relevant Terms

- Amenorrhea: No bleeding for 90 days
- Primary amenorrhea : Absent menarche by 15 years of age
- Secondary amenorrhea: Amenorrhea for 6 months with previously regular menstrual cycles
- Menopause: Amenorrhea for 12 months without other apparent cause
- Precocious menstruation: Menarche before 9 years of age
- Use of terms such as menorrhagia, metrorrhagia or dysfunctional uterine bleeding is not encouraged.

## Causes of heavy or prolonged menses

Coagulopathy	Structural lesion
von Willebrand disease	Uterine leiomyomas (fibroids)
Thrombocytopenia (due to idiopathic thrombocytopenic purpura, hypersplenism, chronic renal failure)	Adenomyosis
Acute leukemia	Endometrial polyps
Anticoagulants	<b>Other</b>
Advanced liver disease	Endometritis
<b>Neoplasm</b>	Hypothyroidism
Endometrial hyperplasia or carcinoma	Intrauterine device
Uterine sarcoma	Hyperestrogenism
	Endometriosis

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# APPROACH TO PATIENTS PRESENTING WITH ABNORMAL UTERINE BLEEDING

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# Goals

- Assess hemodynamic instability
- Identify the source of bleeding
- Check pregnancy
- Determine whether evaluation for endometrial carcinoma is indicated.

# History

- Menstrual history and bleeding pattern
  - Description of bleeding pattern (frequency, duration, regularity, and volume).
  - Heavy menstrual bleeding is defined as more than 80 mL of total blood loss (passing blood clots or changing pads/tampons at least hourly).
  - Presence of postcoital bleeding (cervicitis, ectropion, or, rarely, cervical cancer)
  - Presence of abdominopelvic pain (infection, structural lesions, or endometriosis).
- Sexual history
- History of obstetric or gynecologic surgery
- Contraceptive history
- Risk factors for endometrial cancer
- Medical history: medications, bleeding disorders (personal history of heavy menstrual bleeding since menarche, or symptoms such as frequent bruising, bleeding gums, epistaxis, postpartum hemorrhage, or bleeding with surgical and dental procedures), chronic medical conditions (type 1 diabetes mellitus, celiac disease, chronic kidney disease may develop secondary amenorrhea).
- Family history of bleeding disorders

# Physical Examination

- Initial triage includes assessment of hemodynamic stability since hemodynamically unstable patients (e.g., tachycardic, hypotensive, orthostatic) need to be stabilized before proceeding with additional evaluation of the abnormal uterine bleeding.
- The goal of the physical examination is to look for signs of systemic illness, such as fever, ecchymoses, an enlarged thyroid gland, or evidence of hyperandrogenism (eg, hirsutism, acne, clitoromegaly, male pattern balding). Acanthosis nigricans may be seen in patients with polycystic ovary syndrome. Galactorrhea suggests the presence of hyperprolactinemia.
- A complete pelvic examination should be performed
  - An examination of the pelvis, including speculum and bimanual examinations.
  - Examine all potential bleeding sites, including the urethra, perineum, and anus.
- Cervical cancer screening should be performed if it is not up to date.
- Pelvic examination can be deferred in adolescents if the patient is not sexually active, neither trauma nor infection is suspected.

# Laboratory Testing

- Pregnancy test (urine or serum human chorionic gonadotropin test)
- Complete blood count (CBC) – check for anemia
- Additional tests:
  - Thyroid function test (TSH) in presence of signs or symptoms of thyroid disease, or if the initial workup does not reveal a likely cause.
  - Additional hormonal tests (e.g., prolactin, androgens, estrogen) are indicated only if history or examination findings suggest a specific hormonal cause.
  - The platelet count, prothrombin time, and partial thromboplastin time can be initial screening tests when a bleeding disorder is suspected.

# Endometrial Biopsy

- All patients with abnormal uterine bleeding who are 45 years or older should undergo endometrial sampling (to check for endometrial cancer since older age is an important risk factor).
- Younger women should undergo sampling if they have a history of unopposed estrogen exposure, if medical management fails, or if bleeding symptoms persist.

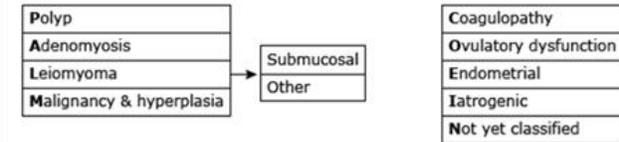
# Imaging

- Indications for pelvic imaging include abnormalities palpated on bimanual examination or symptoms that persist despite initial treatment.
- Transvaginal ultrasonography is the first-line approach for most patients.
- Routine use of magnetic resonance imaging is discouraged but can be considered if sonographic imaging is inadequate.

# Differential Diagnosis

- Although the uterus is often the source, any part of the female reproductive tract can result in vaginal bleeding.
  - Women may also mistake bleeding from non-gynecologic sites (e.g., bladder, urethra, perineum, anus) as vaginal bleeding.
- Prevalence of conditions that cause abnormal bleeding varies according to age.
  - Anovulation is more common in adolescents and perimenopausal women
  - Prevalence of structural lesions and malignancy increases with age.
- The most common causes of abnormal uterine bleeding are described with the acronym PALM-COEIN.
  - PALM group etiologies (polyp, adenomyosis, leiomyoma, malignancy and hyperplasia) are structural and can be imaged or biopsied.
  - COEIN group etiologies (coagulopathy, ovulatory dysfunction, endometrial, iatrogenic, not otherwise classified) are nonstructural.
- These etiologies are not mutually exclusive, and patients may have more than one cause.

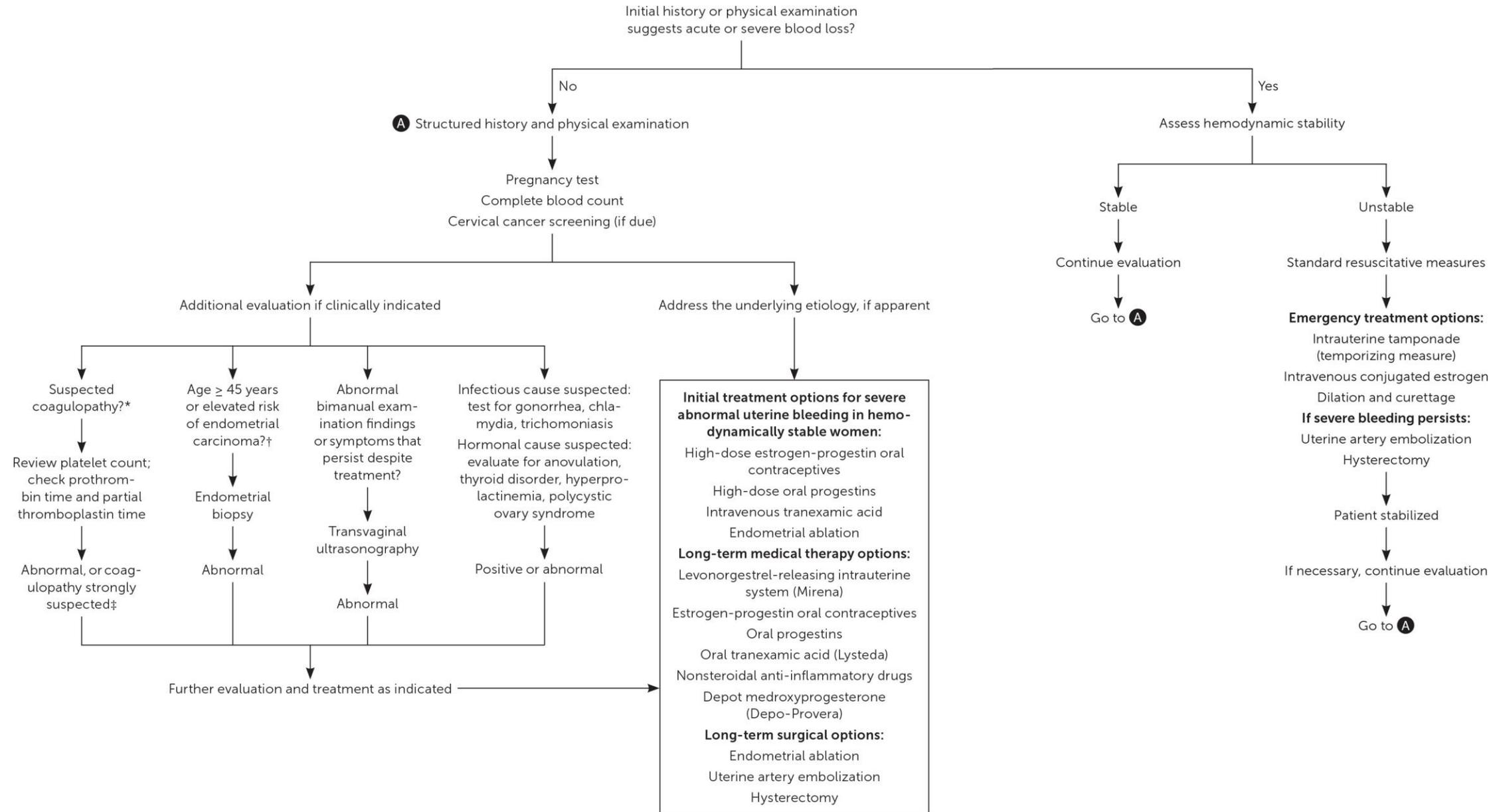
## PALM-COEIN classification system for abnormal uterine bleeding in nongravid reproductive-age women



Basic classification system. The basic system comprises four categories that are defined by visually objective structural criteria (PALM: polyp, adenomyosis, leiomyoma, and malignancy and hyperplasia), four that are unrelated to structural anomalies (COEI: coagulopathy, ovulatory dysfunction, endometrial, iatrogenic), and one reserved for entities that are not otherwise classified (N). The leiomyoma category (L) is subdivided into patients with at least one submucous myoma (L<sub>SM</sub>) and those with myomas that do not impact the endometrial cavity (L<sub>O</sub>). In the 2018 version, the words "submucosal" and "other" do not appear and the phrase "not yet classified" has been changed to "not otherwise classified."

Reproduced from: Munro MG, Critchley HO, Broder MS, Fraser IS, FIGO Working Group on Menstrual Disorders. FIGO classification system (PALM-COEIN) for causes of abnormal uterine bleeding in nongravid women of reproductive age. *Int J Gynaecol Obstet* 2011; 113:3. Illustration used with the permission of Elsevier Inc. All rights reserved.

Legend updated from: Munro MG, Critchley HO, Fraser IS for the FIGO Menstrual Disorders Committee. The two FIGO systems for normal and abnormal uterine bleeding symptoms and classification of causes of abnormal uterine bleeding in the reproductive years: 2018 revisions. *Int J Gynaecol Obstet* 2018; 145:393.



# MANAGEMENT

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# Goals of Management

- Correct the underlying primary etiology, if present and feasible.
- Improve quality of life.
- Prevent an episode of acute uterine bleeding.
- Prevent, or treat, anemia.
- Establish a regular bleeding pattern (or amenorrhea).
- Prevent endometrial hyperplasia/carcinoma.

# Remember!

- In a reproductive-age patient, a single isolated bleeding event that does not result in hemodynamic instability and occurs in the setting of otherwise normal menstrual cycles may not require evaluation other than asking the patient to keep a menstrual diary.
- By contrast, even a single episode of any postmenopausal bleeding is considered abnormal and requires evaluation.

# Clinical decision about treatment

- Tailored
- Treat the underlying cause
- Correct associated problems (such as anemia)
- Prevent recurrences, when possible
- Take into consideration the patient's contraception needs and plans for future childbearing
- Because exposure to unopposed estrogen increases the risk of endometrial cancer, treatment of anovulatory abnormal uterine bleeding involves inducing ovulatory cycles or administering supplemental progesterone to antagonize estrogen's proliferative effect on the endometrium.
- Satisfaction increases with information describing treatment options and outcomes

# Treatment

- Hormonal Therapy
- Non-Hormonal Therapy
- Surgery

# Hormonal Therapy

- Oral Progestins given for 21 days per month
- Levonorgestrel-releasing intrauterine system : more effective and better tolerated than oral
- Oral contraceptives continuously

# Non-Hormonal Therapy

- Non-steroidal Anti-Inflammatory (NSAIDs)
  - reduce menstrual bleeding
  - no NSAID more effective than another.
- Tranexamic acid
  - Two 650-mg tablets taken three times per day for the first 5 days of the cycle decrease bleeding significantly more than NSAIDs.
  - Most appropriate in women with bleeding disorders who desire fertility or have contraindications to oral contraceptives.

# Surgery

- Hysteroscopic polypectomy for endometrial polyps.
- Uterine artery embolization for fibroids.
- Endometrial ablation when excessive uterine bleeding is unresponsive to medical intervention; this is not compatible with fertility
- Hysterectomy is done if no fertility is needed; May be associated with ovarian failure nearly four years earlier than expected.

# **FAMILY PLANNING/ CONTRACEPTION**

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# Family Planning

- Family planning allows individuals and couples to anticipate and attain the desired number, spacing, and timing of children.
- Family Planning includes natural methods (such as basal body temperature charting, calendar calculation etc.) and artificial contraception.

# Systematic Approach to Contraception Counseling

Step 1- Establish rapport

Step 2 - Medical and social history

Step 3 – Select most effective method

Step 4 – Physical assessment

Step 5 – Provide method, instructions and follow up plan

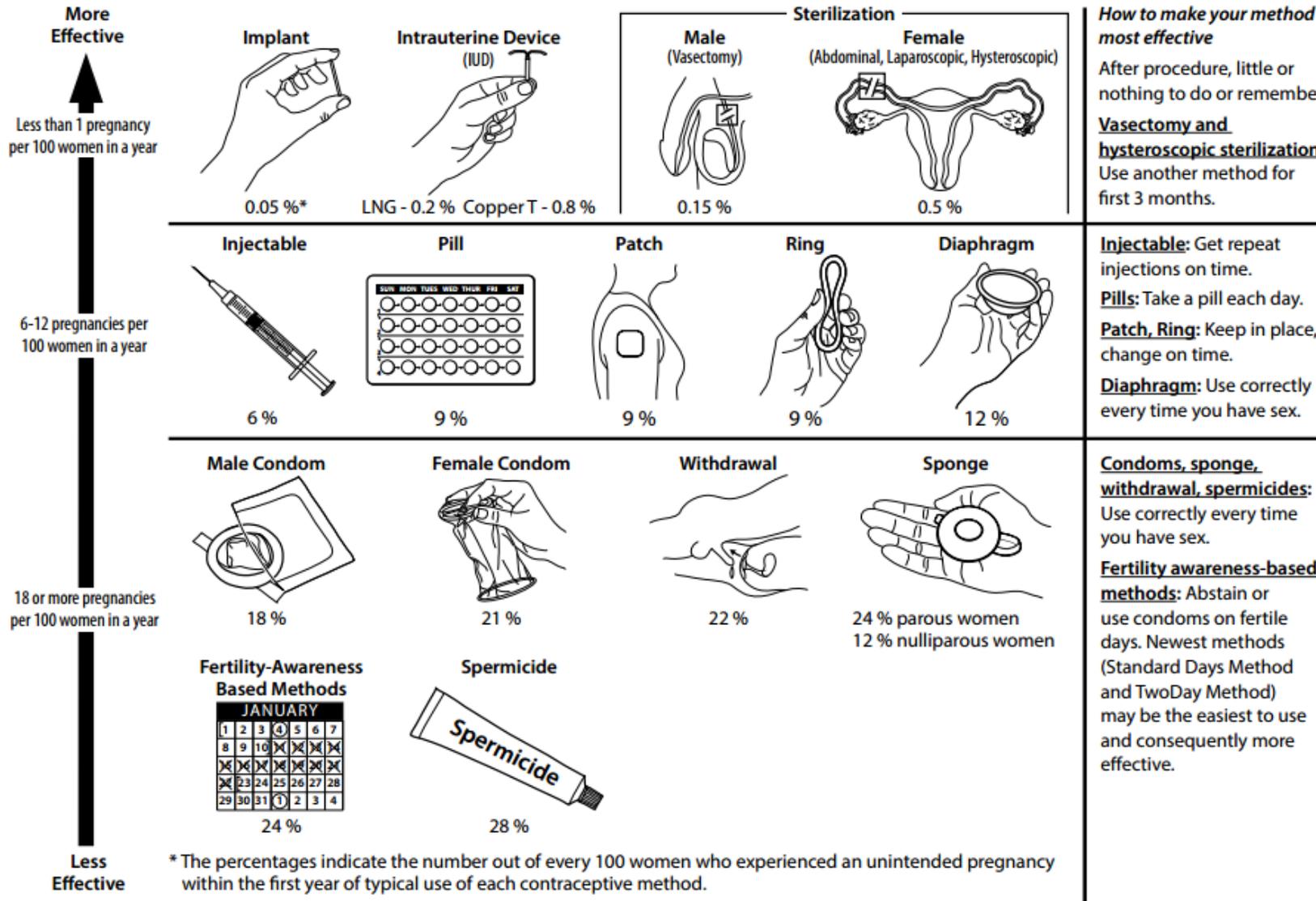
# Contraceptive Counseling

- Pregnancy plans
- Experience with contraceptive methods
- Compliance with user-controlled methods like pills
- Frequency of intercourse
- Importance of protection from sexually transmitted infections (STIs)
- Issue of cost
- Medical conditions

# Available Contraceptive Methods

- Combined hormonal contraceptives
- Progestin-only contraceptives
- Emergency contraceptive pills
- Intrauterine devices
- Barrier contraceptive methods
- Fertility Awareness-Based Methods
- Lactational Amenorrhea Method
- Coitus Interruptus
- Female and Male Sterilization

# Effectiveness of Contraceptive Methods



# Do we need to test for pregnancy before starting contraception?

- Not universally required before initiating contraception.
- Pregnancy testing is not enough to rule out pregnancy.
- Can be affected by several factors (medications, timing [recent intercourse], dilution)

# How to be reasonably certain that a woman is not pregnant?

- The patient has no signs or symptoms of pregnancy  
and
- The patient meets at least one of the following:
  - Is 7 days or less after start of her normal menses
  - Has not had sexual intercourse since her last normal menses
  - Has been correctly and consistently using a reliable contraception method
  - Is 7 days or less after a spontaneous abortion or induced abortion
  - Is within 4 weeks postpartum
  - Is fully or nearly fully breastfeeding (exclusively breastfeeding or most feeds [ $\geq$  85%] are breastfeeds, amenorrheic and less than 6 months post partum).

# Intrauterine Devices (IUD)

- Need to perform pelvic exam before inserting IUDs
- Copper IUD
  - Approved for 10 years
  - Side effect: irregular heavy bleeding
  - No protection against STIs
  - Effective as emergency contraception
- Levonorgestrel IUD
  - Effective for at least 3-5 years
  - Reduces menstrual bleeding and dysmenorrhea, but may cause irregular bleeding and sometimes amenorrhea for the duration of its use
  - No protection against STIs
  - More costly

# Contraindications to use IUDs

- Anatomic abnormality with distortion of uterine cavity
- Gestational trophoblastic disease
- Leiomyoma with distortion of uterine cavity
- Postpartum sepsis
- Unexplained vaginal bleeding before ovulation
- Cervical cancer
- Chlamydia, gonorrhea cervicitis
- Endometrial cancer
- Tuberculosis with pelvic involvement

# Intrauterine Devices and Young Women

- Evidence shows slightly increased risk of expulsion.
- No evidence of increased infertility.
- No evidence that IUD increases the chance of getting sexually transmitted infections; however, women who are at increased risk of these infections are advised against IUD.

# Oral Contraceptives

- Two types:
  - Combined estrogen and progesterone
  - Progestin only pill
- Side effect of irregular bleeding can disappear after few months of use.
- No protection against STIs.
- Protects against ovarian and endometrial cancer.

## Contraindications to Combined Hormonal Contraceptives

known or suspected carcinoma of the breast or personal history of breast cancer	Carcinoma of the endometrium or other known or suspected estrogen-dependent neoplasia
Current or history of cerebral vascular or coronary artery disease	History of cholestatic jaundice of pregnancy or jaundice with previous OCP use
Diabetes mellitus with complications	Headaches with focal neurologic symptoms
Hypersensitivity to any component in oral contraceptive pills	Hepatocellular disease (acute or chronic) with abnormal liver function
Major surgery with prolonged immobilization	Systemic lupus erythematosus with antiphospholipid antibodies
Pregnancy (known or suspected)	Severe hypertension
Stroke	Hepatic adenomas or carcinoma
Undiagnosed abnormal genital bleeding	Complicated valvular heart disease
Thrombophlebitis, or thromboembolic disorders	Acute or history of venous thromboembolism

# Starting Hormonal Contraception

- Can start oral contraceptive pills (OCP) on the day of prescription as long as pregnancy is reasonably excluded.
- No increased risk for adverse outcomes (congenital anomalies, neonatal death, infant death) in infants exposed in utero to OCP.
- Back-up contraception needed for 1st seven days unless started on first day of cycle.
- No need to have a pap smear before, as OCPs do not accelerate cervical neoplasia or interfere with cervical cytology.
- No evidence supporting necessity of clinical breast exam (CBE) and pelvic examination.
- No need to screen for STIs.
- Enough to have a thorough medical history, take blood pressure and weight.

# Generations of Oral Contraceptives

First	Second	Third	Fourth
▪ “Original pills”	▪ Levonorgestrel ▪ Norgestrel ▪ Norethindrone acetate ▪ Norethindrone ▪ Ethynodiol diacetate	▪ Norgestimate ▪ Desogestrel	▪ Drospirinone

# Benefits of Oral Contraceptives

## Contraceptive Benefits

- High efficacy
- Ease of use
- Separation of pill administration from coitus
- Reversibility – most women resume their previous level of fertility once they stop taking oral contraceptive pills

## Non-contraceptive Benefits

- Dysmenorrhea
- Improve heavy menstrual bleeding
- Premenstrual syndrome
- Improvement of Hirsutism/Acne
- Ovarian, endometrial and colorectal cancer
- Functional ovarian cysts
- Benign breast cysts
- Endometriosis
- Increased bone mass (long term users)

# Side Effects of Oral Contraceptives

## Estrogen

- Nausea and vomiting
- Bloating/edema
- Hypertension
- Migraine Headache
- Breast tenderness
- Decreased libido
- Weight gain
- Heavy bleeding
- Leukorrhea

## Progestin

- Increased appetite
- Hypertension
- Fatigue
- Depression
- Hirsutism
- Vaginal yeast infection

# Serious Side Effects of Oral Contraceptives

- Cardiovascular diseases, such as hypertension- These risks increase with age and a history of smoking.
- 3<sup>rd</sup> generation progestin and risk of deep venous thrombosis (DVTs) - small excess risk (1.5 per 10,000 women per year) but is it worth?
- Increased risk for breast cancer and liver tumors.
- 25-year mortality from all causes same for OCP users versus non-users.

# Hormonal Contraception and Chronic Diseases

- Combined hormonal contraceptives can be used safely in women with certain medical conditions, including
  - Well-controlled hypertension
  - Uncomplicated diabetes mellitus
  - Depression
  - Uncomplicated valvular heart disease
  - Migraine headaches without aura
  - Systemic lupus erythematosus without antiphospholipid antibodies
  - Human immunodeficiency virus (HIV) infection
  - Thyroid disease
  - Anemia
  - Uncomplicated liver disease

# Contraception and Diabetes Mellitus

- No evidence that the use of OCPs among women with history of gestational diabetes increases risk of developing noninsulin-dependent diabetes mellitus.
- Use of OCP among women with insulin- or noninsulin-dependent diabetes has:
  - Limited effect on daily insulin requirements
  - No effect on long-term diabetes control
  - No effect on progression to retinopathy
- Copper IUD has no effect on diabetes mellitus.

# Oral Contraceptives and Drug Interactions

## Drugs that decrease OCP effectiveness

- Rifampin
- Amoxicillin
- Ampicillin
- Carbamazepine
- Metronidazole
- Phenobarbital
- Phenytoin
- Tetracycline

## Special Situations

- Antibiotic-related diarrhea may be associated with decreased absorption of OCPs and a diminished therapeutic effect

# Missed Pills

- If a woman misses 1 pill, she should take the missed pill as soon she remembers, and take the next pill as usual.
- If she misses 2 pills during 1<sup>st</sup> 2 weeks, she should take 2 pills as soon as she remembers, then 2 pills the next day then return to usual schedule; but it is better to use additional barrier contraception for that month.
- If she misses 2 pills during 3<sup>rd</sup> week or 3 pills at anytime during a month, she should immediately start a new pack without having a pill-free interval and use back-up method for 7 days.

# Depot Medroxyprogesterone Acetate

- Reliable contraception for 3 months
- Contraceptive effect may persist 9 months
- Side effects
  - Irregular bleeding
  - Amenorrhea
  - Mild loss of bone mineral density when using it; it is regained after discontinuation
- Given one injection every 3 months
- No protection against STIs.

# Back up contraception

Contraceptive method	Back up
Copper IUD	No Need
Levonorgestrel IUD	only needed if > 7 days after starting menses; usually for 7 days
Combined Oral contraceptives	If > 5 days of cycle, use back-up method or abstain for 7 days
Progestin only pills	If > 5 days of cycle, use back-up method or abstain for 2 days
Implants or injectable progesterone	If > 5 days of cycle, use back-up method or abstain for 7 days

# Contraception and Breastfeeding

- The World Health Organization (WHO) advises against hormonal contraception use during the first 6 weeks postpartum in women who are breastfeeding .
  - This is because of concerns regarding the potential effects of steroids on liver and brain development in neonates.
  - Estrogen may increase the risk of thromboembolic disease and may decrease milk supply.
- From 6 weeks to 6 months postpartum, progestin-only contraceptives are to be used .
- After 6 months postpartum, when infants begin to eat solid food, the benefits of estrogen-containing contraceptives may outweigh their risks.

## Contraceptive Choices for Lactating Women

Contraceptive Method	Effect on Mother & Breast Milk	Effects on Infant
Barrier or spermicidal products	No effect on lactation	No known effect
Intrauterine Device	No effect on lactation	No known effect
Low-dose progestin-only*	May reduce milk supply, does not affect duration of breastfeeding	No effect on weight, no adverse effect, no long-term effects
Injectable depot medroxyprogesterone acetate	Some amount secreted in milk; may increase production and protein content, and decrease fat content of milk	No long-term effects, transfers a small amount to infant but results in no measurable effect
Combined estrogen/progestin (OCP, patch, ring)**	Decrease in milk production. Shortens breastfeeding duration, milk concentration not affected, small amounts passed in milk	Slower weight gain, no reported long-term effect
Lactational amenorrhea method (LAM)***	None	None

\* Progestin-only mini pills are the preferred oral contraceptive when breastfeeding

\*\* Although not recommended for breastfeeding women, occasionally used (consider risk/benefit after milk has come in)

\*\*\* For LAM to be effective, the mother must breastfeed frequently, breastfeed exclusively for the first 6 months (no formula), and use another form of contraception when menstrual cycles resume.

# Emergency Contraception

- Two methods can be used:
  - Intrauterine device
    - Copper intrauterine device
    - Effective up to a week after intercourse
  - Emergency contraceptive pills (ECPs)
    - Effective up to 5 days post intercourse
    - Levonorgestrel in a single dose
    - Estrogen/progestin in 2 doses
- Start regular contraception immediately with emergency contraception.
- Advise the woman to abstain from sex or use barrier contraception for 7 days if she uses ECP or till she gets menses, whichever comes first.
- Advise the woman to have a pregnancy test, if she does not have a withdrawal bleed within 3 weeks.

# Other Non-Hormonal Methods-1

- Female diaphragm
  - Inserted before sexual intercourse and removed 6 hours after
  - Reusable, lasts up to 2 years
  - Should be used with a spermicide
  - Contains nonoxynol 9, which can irritate partner and increase the risk of HIV transmission
  - Does not protect from STI
  - Needs bimanual exam before insertion
- Condoms
  - Least effective
  - Protects against STIs when used correctly and consistently

# Other Non-Hormonal Methods-2

- Sponge
  - More effective for nulliparous women
  - Contains spermicide
  - Does not protect from STIs
  - Can cause toxic shock and yeast infections
- Standard days method
  - Avoid unprotected sexual intercourse day 8-19 of the cycle
  - 5% of women get pregnant in first year of use with perfect use
  - Not appropriate for women with 2 or more cycles <26 days or >32 days per year

# Male and Female Sterilization

- Irreversible!
- Female
  - Laparoscopic or abdominal approaches for tubal ligation: immediate sterilization.
  - Hysteroscopic sterilization: perform hysterosalpingogram 3 months after to ensure bilateral tubal occlusion, meanwhile use additional contraception.
- Male
  - Vasectomy: Semen analysis should be done after 8 -16 weeks to ensure procedure was successful, meanwhile back-up contraception.

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**THANK YOU**

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