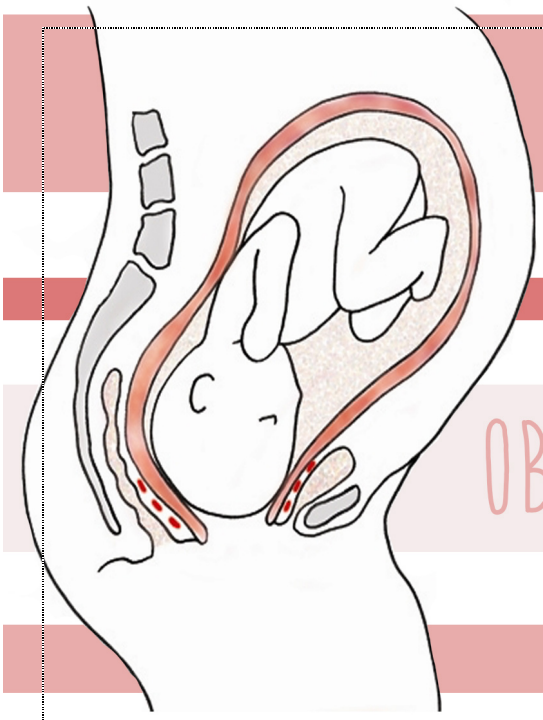


OBSTETRICS AND GYNECOLOGY

(21) Infection of lower genital Tract & PID

Leader: Alanoud Alyousef

Sub-leader: Dana ALdubaib

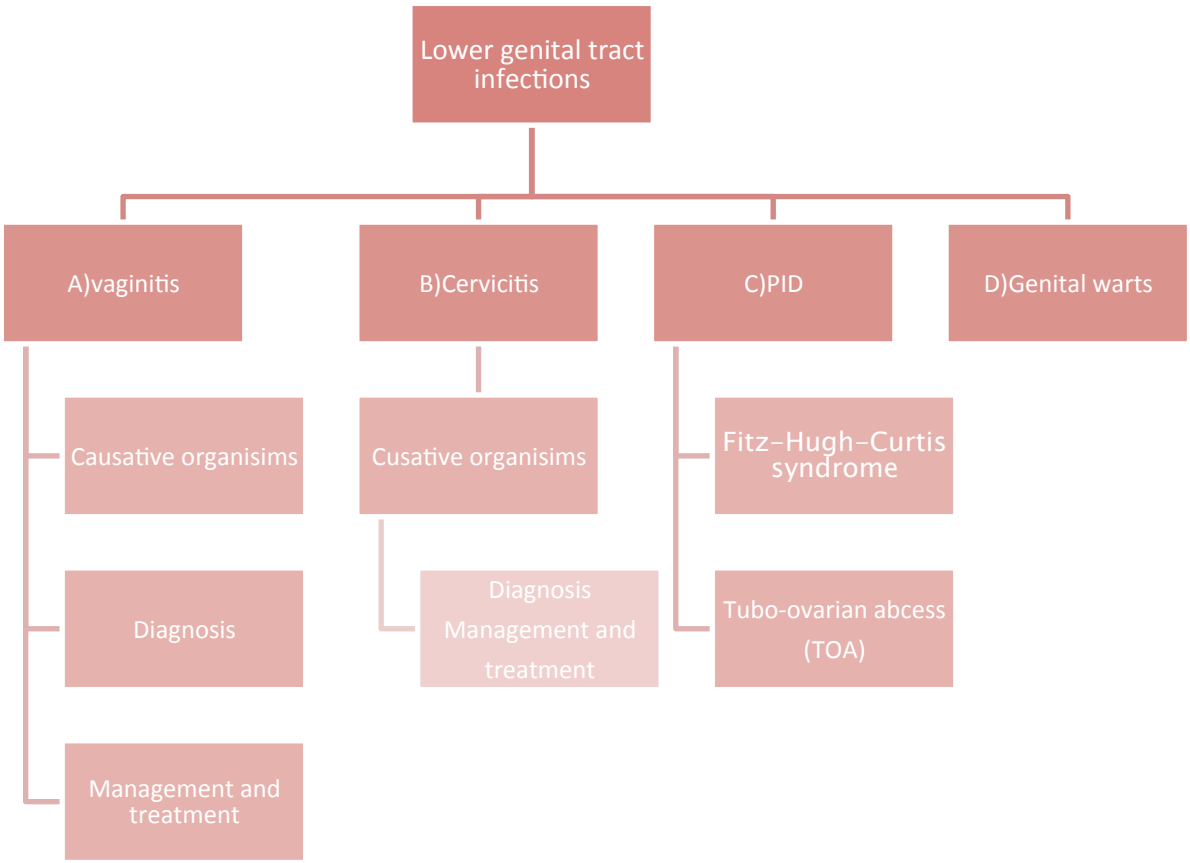
Done by: Abrar AlFaifi

Revised by: Rawan AlQuaiz

Doctor's note Team's note Not important Important 431 teamwork

Objectives:

Not given



Infection of lower genital tract and PID

What is normal?

- The normal vaginal flora is predominately aerobic organisms.
- The most common is the H+ peroxide producing lactobacilli.
- The normal PH is <4.5 (lactobacilli is what makes it acidic).
- Normal vaginal secretions ↑ in the middle of the cycle because of ↑ in the amount of cervical mucus.
- It is clear or white. It may become stretchy and slippery during ovulation or when using oral contraceptives.
- Complains could be abnormality in the amount, smell or color.

- The secretions of the vagina differ according to the time of the cycle and from one woman to another. The secretions should be white and clear, might be yellow in the daily pads (mustard color). There shouldn't be any itching or irritation or foul smell and the discharge shouldn't be a lot.

- The vagina is a dirty place it's not supposed to be sterilized or disinfected. Once you clean it, it becomes prone to infections.

Making the diagnosis

Symptoms

- Discharge, odor, irritation, or itch, redness and pain when voiding.
- Discharge could be:
  - Clear, white, green, gray, yellow.
  - Consistency – thin, thick, or curd like.

Signs

- Excoriations (scratch marks).
- Erythema.
- Discharge.

A) Vaginal Complaints

- Most common reason for Gyne visits.
- 10 million office visits annually.
- PE and laboratory data are recommended.
- 3 most common etiologies are:
  - Vaginal candidiasis.
  - Bacterial vaginosis.
  - Trichomoniasis.

- They are the most common organisms causing vaginal discharge.
- Can be found together or each individually.

1) Bacterial Vaginosis (BV)

- Most common cause of vaginitis in premenopausal women.
- It is caused by alteration of the normal flora, with over-growth of anaerobic bacteria
- It is triggered by ↑ PH of the vagina (intercourse, douches)
  It is triggered by using antiseptic and cleaning the area also through intercourse which changes the pH of the vagina and causes overgrowth of the normal flora.
- Recurrences are common.
- 50% are asymptomatic.
  Most patients are asymptomatic but it can be found by culture in patients with post-surgical infections or preterm labor.

- Itching and inflammation are uncommon (asymptomatic).
- It is not an STD. no need to screen for other STDs, nor screening the partner and treating him.

Complications:

Increases risk for:

- Preterm labor in pregnant women.
- Endometritis and postpartum fever.
- Post-hysterectomy vaginal-cuff cellulitis.
- Postabortal infection.
- Acquiring other STDs, especially HIV.

- In all the cases above, we suspect BV so we always ask for culture.
- Other STDs can happen but the BV itself isn't considered a STD or contagious.

Diagnosis:

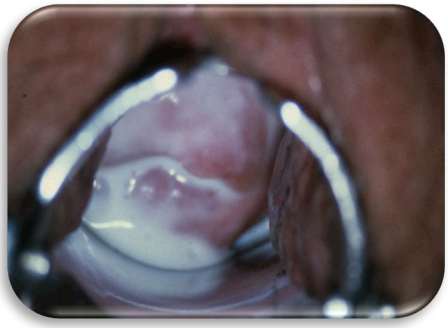
1. Fishy odor (especially after intercourse).
2. Gray secretions.
3. Presence of clue cells. (Clue cells: epithelial cells of the vagina that are covered with bacteria)
4. PH >4.5.
5. +ve whiff test (adding KOH to the vaginal secretions will give a fishy odor).

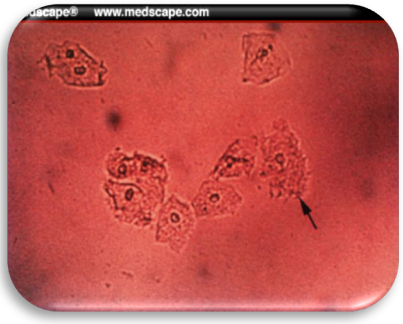
Treatment:

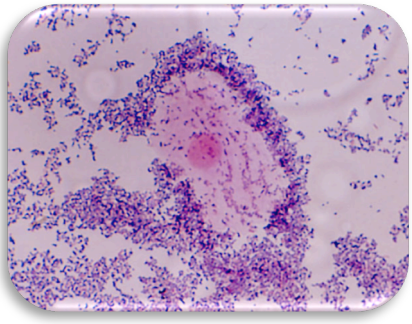
1. Flagyl 500mg Po Bid for one week (95% cure)
2. Flagyl 2g PO x1 (84% cure)
3. Flagyl gel PV
4. Clindamycin cream PV
5. Clindamycin PO

- Treatment of the partner is not recommended cause it's not STD

- Most of Gyne infections are treated with Flagyl if not responding then Clindamycin.





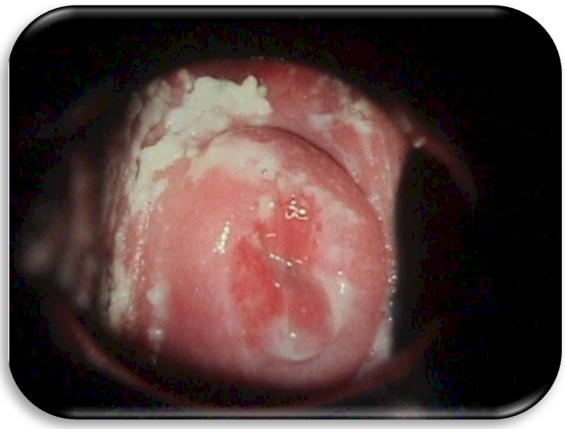


2) Candidiasis

- 75% of women will have the infection at least once during their life.
- 45% of women will have two or more episodes/year.
- 15% have chronic infection 4 times per year.
- Rare before menarche (rare in childhood but it can happen and is usually on the outer surface), but 50% will have it by age 25 (most common in premenopausal women).
- Less common in postmenopausal women, unless she's taking estrogen.
- Not STD (so no need to screen for other STDs or treat the partner).
- 90% of yeast infections are secondary to Candida Albican (Most common).
- Other species (glabrata, tropicalis) tend to be resistant to treatment.

Predisposing factors:

1. Antibiotics: disrupting the normal flora by ↓ lactobacilli.
2. Pregnancy (↓ cell-mediated immunity).
3. Diabetes.
4. OCP.
5. Disinfecting the vagina.



- When the patient is pregnant or on OCP the estrogen level is high >>> infection.
- If the infection is severe and recurrent you check the patient's blood sugar cause you are suspecting diabetes.
- The recurrence of candidiasis is higher in immunocompromised patients.

Diagnosis:

- Vulvar pruritis and burning (like diaper rash).
- The discharge varies from watery to thick cottage cheese discharge.
- Vaginal soreness and dysparunea.
- Splash dysuria.
- O/E: erythema and edema of the labia and vulva.
- The vagina may be erythematous with adherent whitish discharge (signs of irritation).
- Cervix is normal (cause the infection is outside).
- PH< 4.5 budding yeast or mycelia on microscopy (PH is normal).

- When the patient urinates she feels the burning sensation at the irritated area (splash dysuria) so you think of UTI but then you go through the history (no suprapubic pain, no dysuria.. No Other UTI symptoms) you exclude it.
- Dyspareunia: pain with intercourse, the pain happens initially at the beginning of the intercourse (which means something local) because the problem is in the lower part (vestibule>>vestibulitis). It's not deep dyspareunia (pain at the end of the intercourse) and is usually due to something related to a pelvic organ like the uterus (Ex: endometriosis).

Treatment:

1. Topical Azole drugs (80-90% effective).
2. Fluconazole is equally effective (Diflucan 150mg PO x1), but symptoms will not disappear for 2-3 days.
3. 1% hydrocortisone cream may be used as an adjuvant treatment for vulvar irritation.
4. Chronic infections may need long-term treatment (6 months) with weekly Fluconazole.

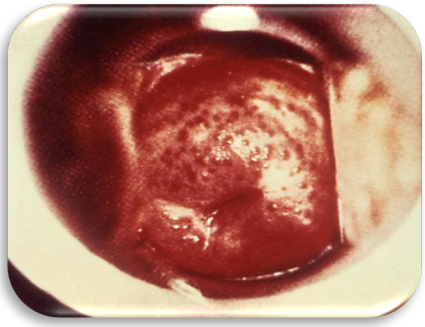
- Topical vaginal or systemic (we usually give systemic tx because it is shown to be better in some studies).
- If chronic infection → you give them a course of six months.
- If asymptomatic → you don't have to treat.

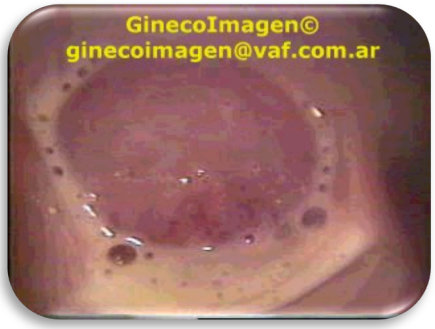
3) Trichomonas Vaginalis

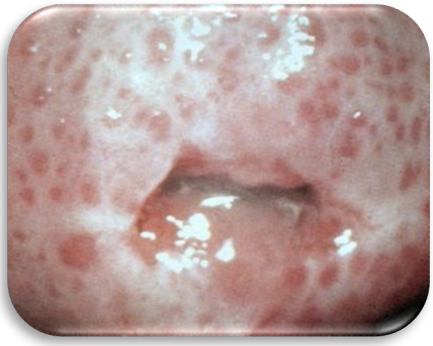
- It is an anaerobic parasite that exists only in trophozite form.
- 3rd most common vaginitis.
- 60% of patients also have BV (it coexists with BV).
- 70% of males will contact the disease with single exposure.
- Virtually always sexually transmitted.
- Patients should be tested for other STDs (HIV, Syphilis, hepatitis).

Diagnosis:

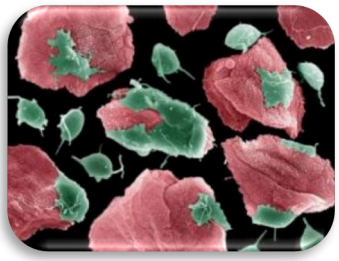
- Profuse, purulent malodorous (foul smell) discharge.
- It may be accompanied by vulvar pruritis.
- Secretions may exudate from the vagina (Here the cervix is inflamed while in BV it's not).
- If severe → patchy vaginal edema and strawberry cervix.
- PH >5.
- Microscopy: motile trichomands and ↑ leukocytes.
- Clue cells → if BV is present.
- Whiff test may be +ve.







Wet Mount very important



- Trichomonas seen only in 50 – 70% .
- Elevated pH.
- Can increase leukocytes.
- Pap smear.

Treatment:

1. Falgyl PO (single or multi dose).
2. Flagyl gel is not effective.
3. The partner should be treated.
4. If refractory to treatment:
   - Retreat with 7 day course.
   - If fails again, try 2gm dose daily x 3 – 5 days.
   - Assure compliance with partner/culture.

D) Other Causes of Vaginitis

1. Atrophic vaginitis (in post-menopausal women):
   - High vaginal pH, thin epithelium, discharge.
   - Parabasal cells on wet mount.
   - Topical estrogen cream.

- In Atrophic vaginitis: the vaginal mucosa becomes very thin and sloughs off.
- Lots of discharge but no smell, no irritation and on examination there's severe atrophy. The vagina becomes white and tender.
- Best treatment for atrophic symptoms is hormonal (topical>systemic) so you give local estrogen cream better than oral.
- If patient has uterus and you are giving the estrogen orally you should give progesterone with it but in local treatment the absorption is very low so you can wait for 3 months before you start progesterone.

2. Atypical manifestations: HSV, HPV.
3. Noninfectious vulvovaginitis:
   - Irritants/allergens.
   - Lichens syndromes (sclerosus, simplex chronicus, planus).

- Lichen syndrome usually comes with irritation and itching more than discharge and doesn't respond to topical antifungal. So, we do biopsy and find lichen sclerosis. And sometimes they come with labial agglutination causing urinary retention. Needs potent treatment of steroids.

Herpes Simplex Virus

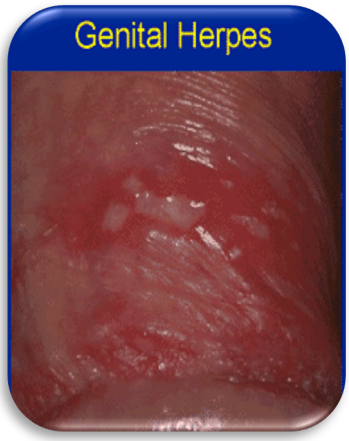
- **The "silent epidemic".**
- **45 million in the US.**
- **1 million newly diagnosed annually.**
- **The most common STD in US, and likely the world.**
- **Almost 25% of Americans have HSV2 antibodies by the age of 30.**

Types:

- **HSV – 1**
  Mostly oro-labial, but an increasing cause of genital herpes.
- **HSV – 2**
  Almost entirely genital.
  95% of recurrent genital lesion.

1) Primary Herpes – Classic Symptoms:

- **Systemic – fever, myalgia, malaise. Can have meningitis, encephalitis, or hepatitis.**
- **Local – clusters of small, painful blisters that ulcerate and crust outside of mucous membranes. Itching, dysuria, vaginal discharge, inguinal adenopathy, bleeding from cervicitis.**
- **New lesions form for about 10 days after initial infection, but can last up to 3 weeks.**
- **Shedding of virus lasts 2 – 10 days.**



- Usually the severity of the symptoms happen more with the initial infection.
- In obstetrics, it's very important to know if there are any active lesions; if so, she undergoes C-section.
- The patient's becomes aware about the onset of blisters before they appear.
- In immunocompromised patients and menopausal women, the area becomes not estrogenized hence the recurrence rate is higher. You put them on regular acyclovir to prevent the recurrent episodes.

2) Recurrent Herpes:

- Reactivation of virus.
- Mild, self-limited.
- Localized, lasting 6-7 days.
- Shedding: 4-5 days (the shedding happens with the presence of the lesion).
- Prodrome: 1-2 days.

Diagnosis:

- Viral isolation (Culture is the best modality):
    - High specificity, low sensitivity.
        - 50% for primary infxn.
        - 20% for recurrent infxn.
- Direct detection of virus (Tzcank smears, PCR).
- Serology (difficult and not usually done):
    - Newer tests that are specific for type of virus (HerpesSelect 2, herpes glycoprotein for IgG, ELISA).

Management Goals:

- Relieve symptoms.
- Heal lesions.
- Reduce frequency of recurrent episodes.
- Reduce viral transmission.
- Patient support and counseling.

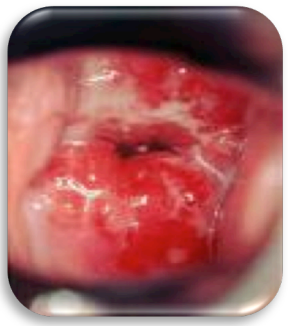
Treatment:

Oral Antiviral Therapy

- Valacyclovir (Valtrex).
- Famciclovir (Famvir).
- Acyclovir (Zovirax).

- Acyclovir is only given to alleviate the symptoms but it will never eradicate the infection.

B) Cervicitis



- May cause abnormal vaginal discharge, postcoital bleeding or irregular bleeding.
- Neisseria Gonorrhea and Chlamydia Trachomatis (most common) infect only the glandular epithelium and are responsible for mucopurulent endocervisitis (MPC).
- Ectocervical epithelium is continuous with the vaginal epithelium, so Trichomonas, HSV and Candida may cause ectocx inflammation.

- Chlamydia is a silent disease, it's an STD and the most common cause for tubal factor infertility.

Diagnosis:

Tests for

- Gonorrhea (culture on Thayer- martin media).
- Chlamydia (ELISA, direct IFA) should be performed.

Treatment:

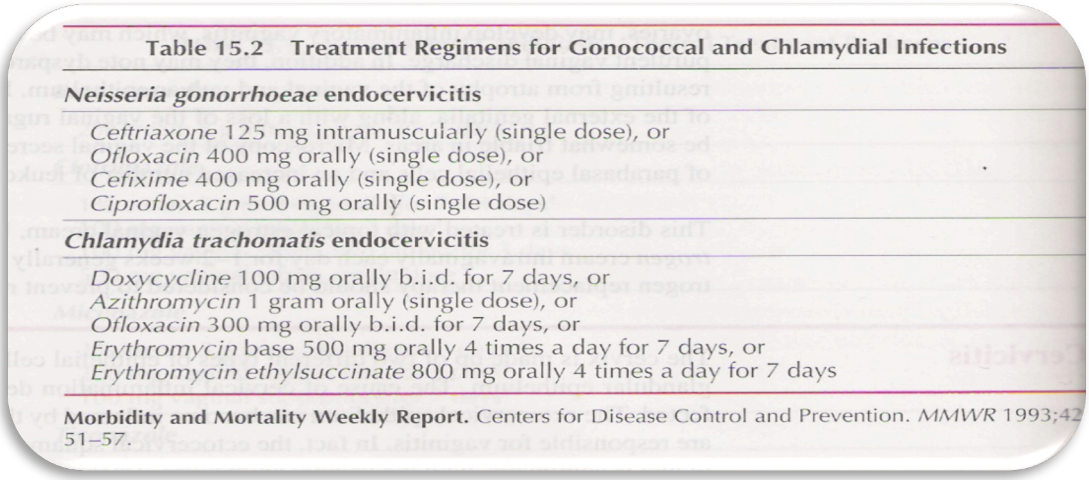


Table 15.2 Treatment Regimens for Gonococcal and Chlamydial Infections

***Neisseria gonorrhoeae* endocervicitis**
Ceftriaxone 125 mg intramuscularly (single dose), or *Ofloxacin* 400 mg orally (single dose), or *Cefixime* 400 mg orally (single dose), or *Ciprofloxacin* 500 mg orally (single dose)
***Chlamydia trachomatis* endocervicitis**
Doxycycline 100 mg orally b.i.d. for 7 days, or *Azithromycin* 1 gram orally (single dose), or *Ofloxacin* 300 mg orally b.i.d. for 7 days, or *Erythromycin* base 500 mg orally 4 times a day for 7 days, or *Erythromycin ethylsuccinate* 800 mg orally 4 times a day for 7 days

Morbidity and Mortality Weekly Report. Centers for Disease Control and Prevention. *MMWR* 1993;42 51–57.

C) Pelvic Inflammatory Disease (PID)

- **Ascending infection, up to the peritoneal cavity.**
- **Organisms: Chlamydia, N Gonorrhea.**
- **Less often: H Influenza, group A Strept, Pneumococci, E-coli.**
- **Acute PID 1-2% of young sexually active women each year.**
- **85% because of STD- 15% occur after procedures that break cervical mucous barrier.**

Diagnosis:

Difficult because of wide variation of signs and symptoms:

- **Clinical triad: pelvic pain (90%), cervical motion tenderness & adnexal tenderness.**
- **Fever.**
- **Cervical motion tenderness indicates peritoneal inflammation.**
- **Patients may or may not have mucopurulent discharge.**
- **leukocytosis.**

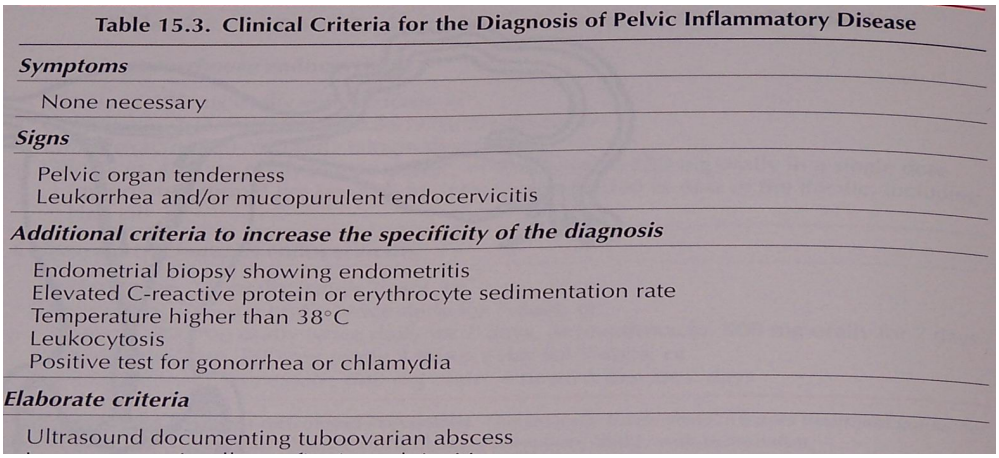


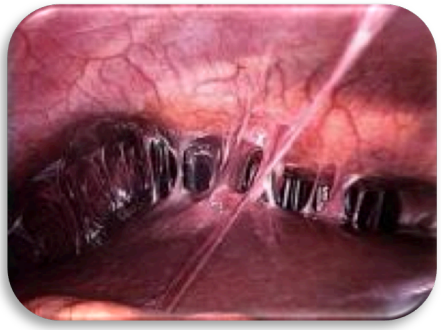
Table 15.3. Clinical Criteria for the Diagnosis of Pelvic Inflammatory Disease

Symptoms
None necessary
Signs
Pelvic organ tenderness Leukorrhea and/or mucopurulent endocervicitis
Additional criteria to increase the specificity of the diagnosis
Endometrial biopsy showing endometritis Elevated C-reactive protein or erythrocyte sedimentation rate Temperature higher than 38°C Leukocytosis Positive test for gonorrhea or chlamydia
Elaborate criteria
Ultrasound documenting tuboovarian abscess

Differential diagnosis:

- **Acute appendicitis.**
- **Endometriosis.**
- **Torsion/rupture adx mass.**
- **Ectopic pregnancy.**
- **Lower genital tract infection.**
- **75% associated with endocervical infection & coexistent purulent vaginal discharge.**

Fitz-Hugh-Curtis syndrome:



- **1-10%.**
- **Perihepatic inflammation & adhesion.**
- **Sings and symptoms; RUQ pain, pleuritic pain, tenderness at RUQ on palpation of the liver.**
- **Mistaken dx; acute cholecystitis, pneumonia.**

- **The infection reaches the peritoneum causing adhesions between the liver and the anterior wall of the abdomen.**

Risk Factors:

- **Sexual behavior.**
- **Others**
  - **IUD user (multifilament string).**
  - **Surgical procedure.**
  - **Previous acute PID.**
  - **Reinfection → untreated male partners 80%.**
- **Decrease risk**
  - **Barrier method.**
  - **OC.**

Sequela:

- **Infertility → 20%.**
- **Ectopic pregnancy ~6fold increase (because it damages the tubes and causes adhesions).**
- **Chronic pelvic pain.**
- **TOA → 10%. (Tubo-ovarian abscess)**
- **Mortality:**

-Acute PID → 1%.

-After rupture TOA → 10%

Medication:

- **Empirical ABx cover wide range of bacteria.**
- **Treatment started as soon as culture & diagnosis is confirmed/suspected:**
  - **Failure rate: oral antibiotic → 10-20%**
  - **Failure rate: IV abx → 5-10%**
- **Reevaluate 48-72 hrs of initial OPD (outpatient) therapy.**

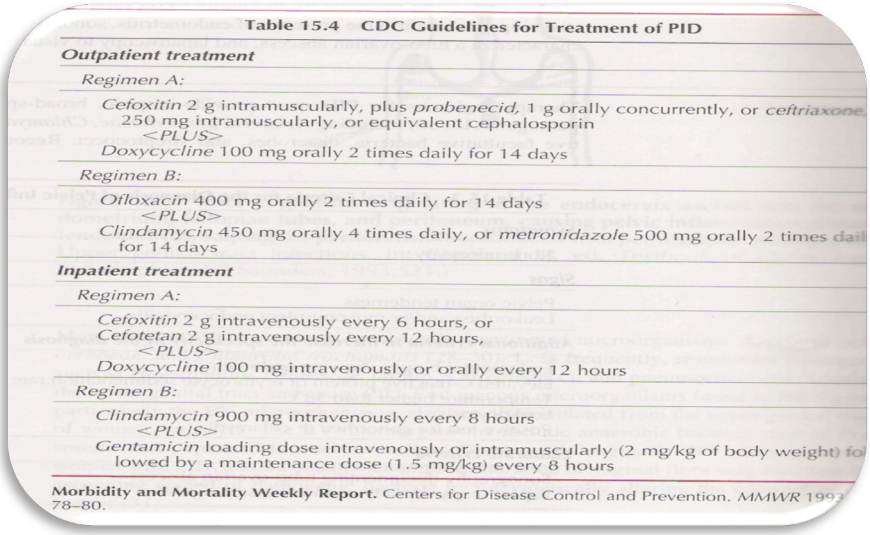


Table 15.4 CDC Guidelines for Treatment of PID

Outpatient treatment

Regimen A:

Cefoxitin 2 g intramuscularly, plus *probenecid,* 1 g orally concurrently, or *ceftriaxone* 250 mg intramuscularly, or equivalent cephalosporin
<*PLUS*>
Doxycycline 100 mg orally 2 times daily for 14 days

Regimen B:

Ofloxacin 400 mg orally 2 times daily for 14 days
<*PLUS*>
Clindamycin 450 mg orally 4 times daily, or *metronidazole* 500 mg orally 2 times daily for 14 days

Inpatient treatment

Regimen A:

Cefoxitin 2 g intravenously every 6 hours, or
Cefotetan 2 g intravenously every 12 hours,
<*PLUS*>
Doxycycline 100 mg intravenously or orally every 12 hours

Regimen B:

Clindamycin 900 mg intravenously every 8 hours
<*PLUS*>
Gentamicin loading dose intravenously or intramuscularly (2 mg/kg of body weight) followed by a maintenance dose (1.5 mg/kg) every 8 hours

Morbidity and Mortality Weekly Report. Centers for Disease Control and Prevention. *MMWR* 199 78–80.

Criteria for hospitalization

- **There's a criteria for admission (fever, not cooperative ..) otherwise you give one injection and send them home.**

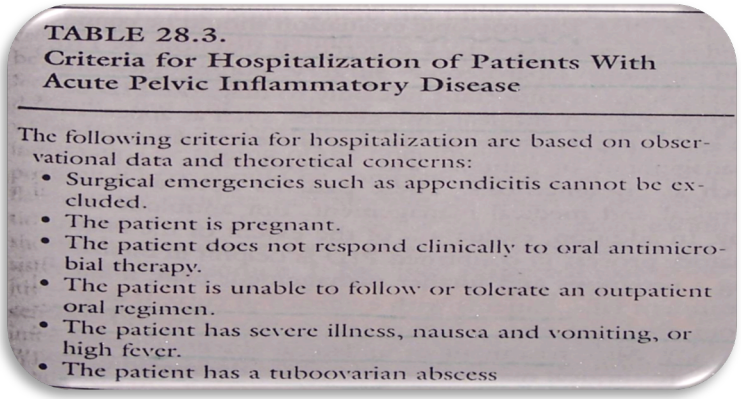


TABLE 28.3.
Criteria for Hospitalization of Patients With Acute Pelvic Inflammatory Disease

The following criteria for hospitalization are based on observational data and theoretical concerns:

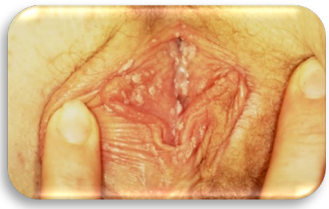
- Surgical emergencies such as appendicitis cannot be excluded.
- The patient is pregnant.
- The patient does not respond clinically to oral antimicrobial therapy.
- The patient is unable to follow or tolerate an outpatient oral regimen.
- The patient has severe illness, nausea and vomiting, or high fever.
- The patient has a tuboovarian abscess

Tubo-Ovarian Abscess (TOA)

- **End-stage PID.**
- **Causes agglutination of pelvic organs (tubes, ovaries and bowel).**
- **75% of patients respond to IV antibiotics.**
- **Drainage may be necessary.**

D) Genital Warts

- **Condyloma accuminata secondary to HPV infection (usually 6&11), these are non-oncogenic types.**
- **Usually at areas affected by coitus (posterior fourchette).**
- **75% of partners are infected when exposed (STD → must treat the partner).**
- **Recurrences after treatment are secondary to reactivation of subclinical infection.**



Treatment:

Table 15.5 Treatment Options for External Genital and Perianal Warts

Modality (%)	*Efficacy (%)*	*Recurrence risk*
Cryotherapy	63–88	21–39
Podophyllin 10–25%	32–79	27–65
Podofilox 0.5%*	45–88	33–60
Triochloroacetic acid 80–90%	81	36
Electrodesiccation or cautery	94	22
Laser†	43–93	29–95
Interferon	44–61	0–67

*May be self-applied by patients at home.
†Expensive, reserve for patients who have not responded to other regimens.

Summary

- Lactobacilli → the most common normal flora of the vagina. It's responsible for the naturally acidic environment of the vagina (pH < 4.5) because it's an H+ peroxide producing organism.
- The 3 most common organisms that cause abnormal vaginal discharge:

1) Bacterial vaginosis.
2) Vaginal candidiasis.
3) Trichomoniasis.

1) Bacterial Vaginosis (BV):

- Most common cause of vaginosis in premenopausal women.
- Triggered by changes in the pH of the vagina (antiseptic wash and douches) → causing ↑ pH → overgrowth of normal flora.
- 50% asymptomatic.
- Not a STD.
- Diagnosis: fishy odor, +ve whiff test, pH >4.5, presence of clue cells and grey secretions.
- Treated with Flagyl. If no response → Clindamycin.

2) Candidiasis:

- 25% will have it by the age of 25 and rare before menarche.
- Not a STD.
- 90% of yeast infections are secondary to Candida Albicans.
- The recurrence of candidiasis is higher in immunocompromised patients.
- Diagnosis: itching and burning, cottage cheese discharge, splash dysuria, normal pH.
- Treated with topical azole drugs.
- Chronic infections need long-term tx (6 months) with fluconazole.

3) Trichomoniasis:

- Parasite.
- Sexually transmitted disease and patient should be tested for other STDs.
- Diagnosis: purulent foul smelling discharge. Affects the vagina as well as the cervix (unlike BV).
- In severe infections → patchy vaginal edema and strawberry cervix.
- pH > 5
- Wet mount → trichomonas seen.
- Treated with flagyl.

- Atrophic vaginitis → in postmenopausal women.
- PID: Ascending infection, up to the peritoneal cavity.
- Organisms that cause PID: Chlamydia, N Gonorrhea.
- Diagnosis: Clinical triad: pelvic pain (90%), cervical motion tenderness & adnexal tenderness.
- Fitz-Hugh-Curtis syndrome: perihepatic inflammation & adhesions. Signs and symptoms; RUQ pain, pleuritic pain, tenderness at RUQ on palpation of the liver.
- End stage of PID --> Tubo-ovarian abscess.

MCQ's:

From Hacker and Moore's Essentials of Obstetrics & Gynecology:

Q1) A 15-year-old patient comes to your office complaining of heavy vaginal discharge that is yellow in appearance. She is sexually active, and her pregnancy test is negative. She does not have cervical or adnexal tenderness and is afebrile. You do a cervical culture that reveals Neisseria gonorrhea. What is the best treatment for this patient?

A. Cefixime.
B. Doxycyclin.
C. Erythromycin.
D. Cefixime & Azithromycin.

Answer: (D)
Explanation: **Keep in mind, a patient who tests positive for gonorrhea should be given antibiotic treatment for both chlamydia and gonorrhea because of the high risk of co-infection (see page 271 of the text). The opposite is not true: If a patient tests positive for Chlamydia trachomatis, she can be treated for chlamydia alone.**

From Obstetrics and Gynecology Pretest:

323. A 20-year-old G2P0020 with an LMP 5 days ago presents to the emergency room complaining of a 24-hour history of increasing pelvic pain. This morning she experienced chills and fever, although she did not take her temperature. She reports no changes in her urine or bowel habits. She has had no nausea or vomiting. She is hungry. She denies any medical problems. Her only surgery was a laparoscopy performed last year for an ectopic pregnancy. She reports regular menses and denies dysmenorrhea. She is currently sexually active. She has a new sexual partner and had sexual intercourse with him just prior to her last menstrual period. She denies a history of any abnormal Pap smears or sexually transmitted diseases. Urine pregnancy test is negative. Urinalysis is completely normal. WBC is 18,000. Temperature is 38.8°C (102°F). On physical examination, her abdomen is diffusely tender in the lower quadrants with rebound and voluntary guarding. Bowel sounds are present but diminished. Which of the following is the most likely diagnosis?
a. Ovarian torsion
b. Endometriosis
c. Pelvic inflammatory disease
d. Kidney stone
e. Ruptured ovarian cyst

324. A 32-year-old woman presents to the emergency room complaining of severe lower abdominal pain. She says she was diagnosed with pelvic inflammatory disease by her gynecologist last month, but did not take the medicine that she was prescribed because it made her throw up. She has had fevers on and off for the past 2 weeks. In the emergency room, the patient has a temperature of 38.3°C (101°F). Her abdomen is diffusely tender, but more so in the lower quadrants. She has diminished bowel sounds. On bimanual pelvic examination, bilateral adnexal masses are palpated. The patient is sent to the ultrasound department, and a transvaginal pelvic ultrasound demonstrates bilateral tubo-ovarian abscesses. Which of the following is the most appropriate next step in the management of this patient?

a. Admit the patient for emergent laparoscopic drainage of the abscesses.
b. Consult interventional radiology to perform CT-guided percutaneous drainage of the abscesses.
c. Send the patient home and arrange for intravenous antibiotics to be administered by a home health agency.
d. Admit the patient for intravenous antibiotic therapy.
e. Admit the patient for exploratory laparotomy, TAH/BSO.

325. A 36-year-old woman presents to the emergency room complaining of pelvic pain, fever, and vaginal discharge. She has had nausea and vomiting and cannot tolerate liquids at the time of her initial evaluation. The emergency room physician diagnoses her with pelvic inflammatory disease and asks you to admit her for treatment. Which of the following is the most appropriate initial antibiotic treatment regimen for this patient?

a. Doxycycline 100 mg PO twice daily for 14 days
b. Clindamycin 450 mg IV every 8 hours plus gentamicin 1 mg/kg load followed by 1 mg/kg every 12 hours
c. Cefoxitin 2 g IV every 6 hours with doxycycline 100 mg IV twice daily
d. Ceftriaxone 250 mg IM plus doxycycline 100 mg PO twice daily for 14 days
e. Ofloxacin 400 mg PO twice daily for 14 days plus Flagyl 500 mg PO twice daily for 14 days

Answers:

323 to 325. The answers are 323-c, 324-d, 325-c. (*Schorge, pp 73-76.*) Ovarian torsion, appendicitis, and acute salpingitis are all commonly associated with fever, abdominal pain, and elevated white blood cell count. Ruptured ovarian cysts present with acute abdominal pain without fever. Ovarian torsion is usually associated with an adnexal mass. Pain from ruptured ovarian cysts may occur at any time throughout the menstrual cycle but often present around the time of ovulation. Although appendicitis is in the differential diagnosis in any woman presenting with abdominal pain and fever, it is unlikely in the patient in question 323 as she has had no nausea, vomiting, or anorexia. In cases of kidney stone, urinalysis usually indicates the presence of blood. In addition, the pain is usually in the flank areas. The timing of the symptoms of the patient in question 323 and her history of a new sexual partner make acute salpingitis the most likely diagnosis. A tubo-ovarian abscess (TOA) may form in a patient with untreated pelvic inflammatory disease. A patient with a tubo-ovarian abscess should be initially hospitalized and treated with intravenous antibiotics. Patients with TOAs, who do not improve on broad-spectrum antibiotics, may require drainage of the abscesses by laparotomy, laparoscopy, or percutaneously under CT guidance.

For mistakes or feedback

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