

433 Teams

OBSTETRICS & GYNECOLOGY

Pelvic Inflammatory Disease/ Pelvic Abscess

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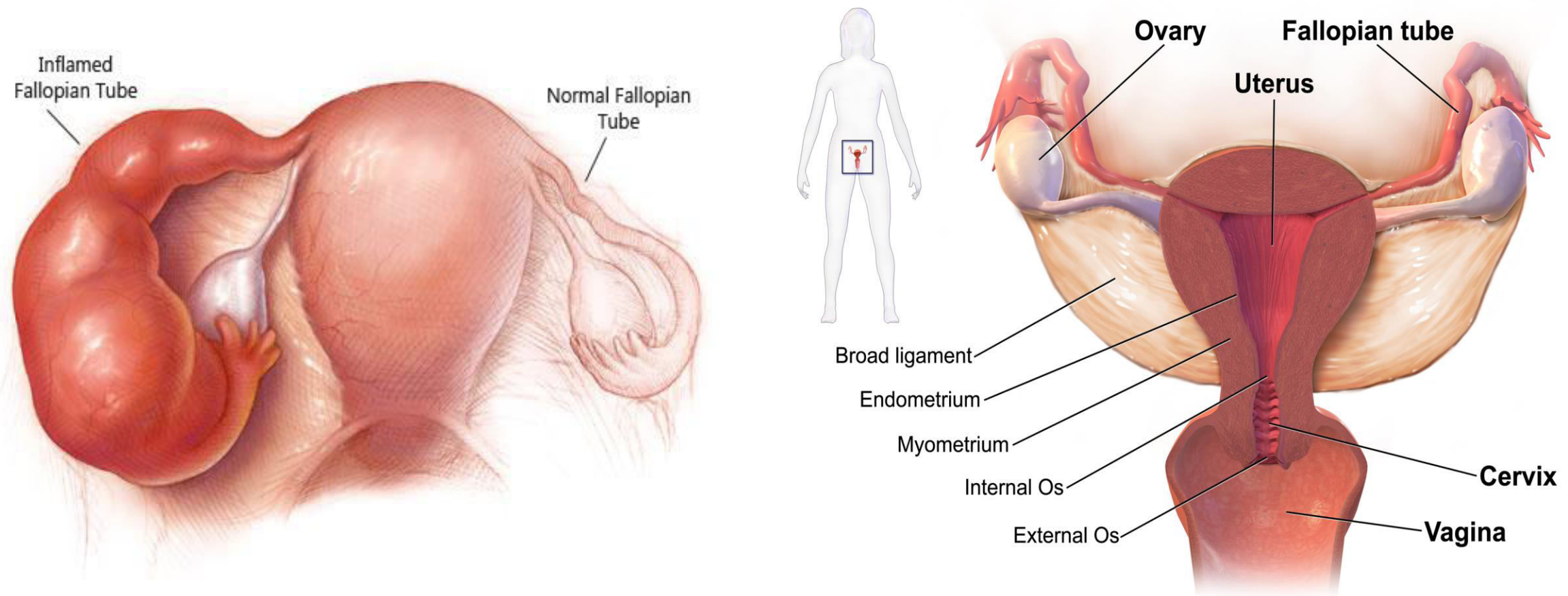


Objectives

- Identify the prevalence of Pelvic Inflammatory Disease (PID)
- Explain the etiology and pathogenesis of PID
- Describe the symptoms and signs of PID / Diagnosis
- Describe the management of PID
- Discuss the tubo-ovarian abscess
- List the complications of PID

What is PID*?

a spectrum of *infection-induced inflammation* of the upper genital tract that includes endometritis, salpingitis, pelvic peritonitis, and/or tubo-ovarian abscess (TOA).



*Affecting non-pregnant and occasionally pregnant women

Pathogenesis of PID

- **Ascending** spread of microorganisms from vagina & endocervix to endometrium, tubes, contiguous structures.

The Prevalence of PID

- The CDC has estimated that **more than 1 million** women in the USA experience an episode of PID every year.
- The disease leads to approximately 2.5 million office visits and 125,000-150,000 hospitalizations yearly.
- No specific international data is available for PID incidents worldwide.
- The annual rate of PID in high-income countries has been reported to be as high as 10-20 per 1000 women of reproductive age.
- **More than 10% of reproductive aged women report a history of PID**
- **PID develops in 15% to 30% of women with inadequately treated gonococcal or chlamydial cervicitis**

Etiology

- 85% of infection in **sexually active female** of reproductive age
- 15% of infection occur **after procedures** that **break mucous barrier**
- *Neisseria gonorrhoeae*
- *C. trachomatis*
- *Mycoplasma genitalium*
- Polymicrobial flora
 - *Prevotella* sp.
 - *Peptostreptococcus* sp.
 - *Escherichia*
 - Anaerobic gram-negative rods.

*The most important single-agent causes of PID include ***C. trachomatis***, ***N. gonorrhoeae*** and **genital mycoplasmas** (commonly isolated from tubal fluid bacterial cultures)

Organism	Pathogenesis
C. trachomatis	<ul style="list-style-type: none"> ➤ Produce mild form of salpingitis ➤ Slow growth (48-72 hours) ➤ Intercellular organism ➤ Insidious onset ➤ Remain in tubes for months or years after initial colonization of upper genital tract ➤ More severe tubes involvement
N. Gonorrhoeae	<ul style="list-style-type: none"> ➤ Gram –ve diplococcus ➤ Rapid growth (20-40 minutes) ➤ Rapid and intense inflammatory response ➤ 2 Major sequelae [Infertility and ectopic pregnancy, strong association with prior chlamydia infection]

Signs and symptoms of PID: (some women are asymptomatic)

- ✓ Abdominal pain
- ✓ Abnormal Discharge
- ✓ Intermenstrual bleeding
- ✓ Postcoital bleeding
- ✓ Fever
- ✓ Urinary frequency
- ✓ Lower back pain
- ✓ Nausea/vomiting (**autonomic reflexes**)

Risk factors for PID:

- Strong correlation with **exposure to STDs**
- Age of **1st intercourse**
- Frequency of intercourse
- Number of sexual partners
- Marital status; **33% in nulliparous**
- Increase risk
 - **IUD** user (multifilament string)
 - **Surgical procedure**
 - **Previous acute PID (recurrence)**
- Reinfection if untreated male partner (80%)
- **Decrease risk**
 1. Barrier method
 2. OCP

Causes of acute pelvic pain

1- Gynecologic

Adnexal accidents (e.g. rupture)

Acute infections (e.g. PID)

Pregnancy complications (ectopic)

2- Nongynecologic

Gastrointestinal (e.g. appendicitis)

Genitourinary (e.g. cystitis, urethral stones)

Physical Examination:

- Assess the **abdomen** for tenderness.
- **Vaginal secretion** examination to assess the presence of BV.
- Microscopy of the vaginal secretion should be examined for the presence of leukocytes, clue cells, and trichomonads.
- **Cervical canal** examination for the presence of yellow/green mucopus and friability.
- Testing for *C. trachomatis* and *N. gonorrhoeae*.
- **A bimanual pelvic examination** to assess for pelvic organ tenderness and pelvic mass (might suggest a TOA)
- **Lab tests:**
 - A complete blood count
 - Erythrocyte sedimentation rate
 - C-reactive protein test
- **Imaging studies:**
 - Pelvic ultrasonography (to rule out symptomatic ovarian **cysts** or those with **pelvis mass** noted on bimanual pelvic examination)
 - Computed tomography (to rule out **appendicitis**)
- **Laparoscopic visualization:**
 - Most **accurate** method to confirm PID
 - All patients with uncertain diagnosis, **no respond to treatment**
 - Negative gram smear does not rule out PID

Management of PID

Severity of PID	Management
Mild/moderate	<ul style="list-style-type: none">• Treat as outpatient• Aim at microbiologic cure for N. gonorrhoeae and C. trachomatis (even in the presence of negative endocervical screening for these organisms)• Coverage for polymicrobial flora associated with BV.• Antibiotic therapy
Severe/TOA	<ul style="list-style-type: none">• Hospitalization and inpatient parenteral therapy (criteria noted)• Imaging should be considered• Surgical intervention is recommended for those who failed to antibiotic therapy alone:<ul style="list-style-type: none">• Size of the TOA with abscesses 10 cm or greater in diameter• Patient who fail to respond to antibiotic treatment within 48-72 hrs. (persistent fever, increasing leukocytosis)• Drainage of TOA via laprotomy, laparoscopy, or image-guided percutaneous routes)

Therapeutic goal: eliminate acute infection & symptoms as well as prevent long term sequelae.

Recommended oral regimen

Ceftriaxone 250 mg intramuscularly in a single dose
Plus
Doxycycline 100 mg orally twice a day for 14 days
With or without
Metronidazole 500 mg orally twice a day for 14 days
Or
Cefoxitin 2 g intramuscularly in a single dose and
Probenecid 1 g orally administered concurrently in a single dose
Plus
Doxycycline 100 mg orally twice a day for 14 days
With or without
Metronidazole 500 mg orally twice a day for 14 days
Or
Other parenteral third-generation cephalosporins (e.g., ceftizoxime or cefotaxime)
Plus
Doxycycline 100 mg orally twice a day for 14 days
With or without
Metronidazole 500 mg orally twice a day for 14 days

*Rx **male partners** &
education for prevention
reinfection

*Rx male partners:
Regimens for uncomplicated
gonorrhoeae & chlamydial
infection

➤ **Ceftriaxone** 125 mg
IM followed by
• **Doxycycline**
(100) 1x2 pc x7
days or
• **Azithromycin**
1gm or
• **Ofloxacin** (300)
1x2 pc x7 days

Criteria for hospitalization

- Surgical emergencies (e.g. appendicitis) cannot be excluded.
- Patient is pregnant.
- Patient does not respond clinically to oral antibiotic therapy.
- Patient is unable to follow/tolerate an outpatient oral regimen.
- Patient has severe illness, nausea and vomiting or high fever.
- Patient has a tubo-ovarian abscess.

Complications of PID

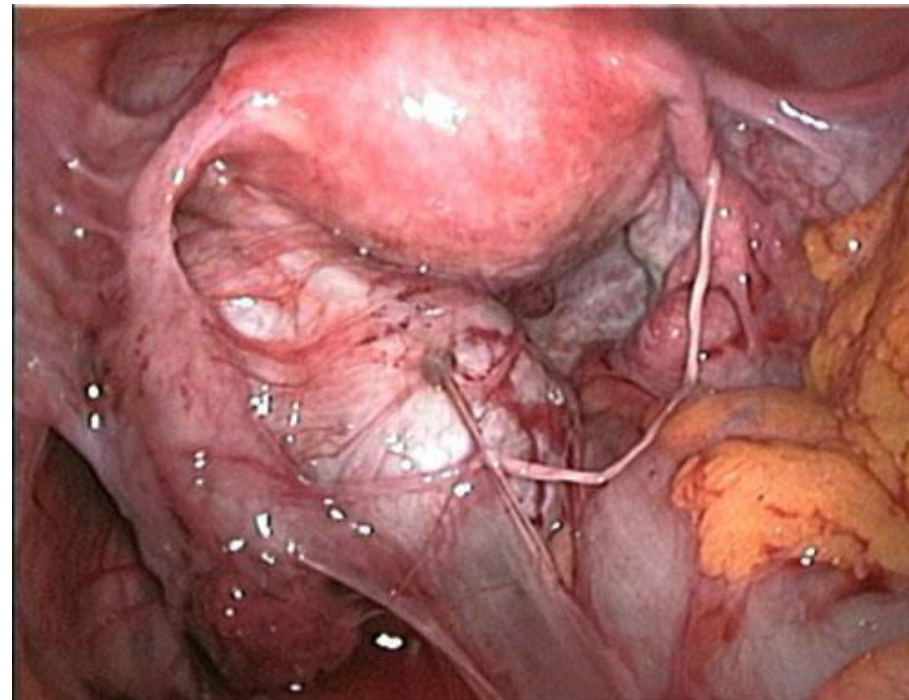
1. Chronic pelvic pain 25%
2. Infertility
3. Ectopic pregnancy (increased 15%-50%)

➤ PID may produce TOA and extend to produce pelvic peritonitis and **Fitz-Hugh Curtis** syndrome (perihepatitis)

➤ Acute rupture of TOA and peritonitis is a life threatening event that calls for urgent abdominal surgery.



Perihepatitis



Peritoneal Adhesions

Notes

- ✓ Hx of unilateral pelvic pain -> suspect ectopic pregnancy
- ✓ Hx of bilateral pelvic pain -> suspect PID
- ✓ chlamydia causes asymptomatic PID -> infertility
- ✓ clinical picture of chronic PID -> chronic pelvic pain/no cervical discharge/associated with infertility
- ✓ **How is the menstrual cycle associated with PID?**

At the end of the menstrual cycle the cervical mucous barrier is broken down, which facilitates bacteria ascending from the lower reproductive tract.

- ✓ **what are the routes of upper reproductive tract infection?**

Hematogenous/lymphatic/ascending

- ✓ What is the CDC criteria for diagnosing PID?
 - ① Bilateral pelvic pain
 - ② Mucopurulent cervical discharge
 - ③ Cervical motion tenderness
 - ④ Elevated WBCs
 - ⑤ Elevated ESR

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