UNIT 3: GYNECOLOGY
SECTION A: GENERAL GYNECOLOGY

Educational Topic 36: Sexually Transmitted Infections (STI) and Urinary Tract Infections (UTI)

Rationale: Early recognition and treatment of urinary and pelvic infections may help prevent short and long-term morbidity. Prevention of sexually transmitted infections is a major public health goal.

Intended Learning Outcomes:
A student should be able to:

• Describe the guidelines for STI screening and partner notification/treatment
• Describe STI prevention strategies, including immunization
• Describe the symptoms and physical exam findings associated with common STIs
• Discuss the steps in the evaluation and management of common STIs including appropriate referral
• Describe the pathophysiology of salpingitis and pelvic inflammatory disease
• Describe the evaluation, diagnostic criteria and initial management of salpingitis/pelvic inflammatory disease
• Identify possible long-term sequelae of salpingitis/pelvic inflammatory disease
• Describe the diagnosis and management of UTIs

TEACHING CASE

CASE: A 16-year-old G1P1 female, LMP one week ago, presents with a one-week history of severe lower abdominal pain. Pain is constant, bilateral and accompanied by fever and chills. She has had some nausea and several episodes of vomiting. She has been sexually active for 3 years and has had unprotected intercourse with several partners. She denies irregular bleeding, dysmenorrhea or dyspareunia. Past medical history is non contributory. Past surgical history is remarkable for tonsillectomy as a child and an uncomplicated vaginal delivery one year ago.

Physical exam reveals an ill appearing 16-year-old with a temperature of 98.6° F (37° Celsius) and has a pulse of 94 bpm, BP 124/82 and a respiratory rate 22 breaths/minute. On examination of the abdomen, bowel sounds are present, there is bilateral lower abdominal tenderness and the abdomen is slightly distended with rebound, negative psoas and Murphy's signs. Pelvic exam reveals the BUS (Bartholins, Urethral, Skene's glands) to be normal and the vagina to be pink
and moist. There is a purulent discharge from the cervical os and the cervix appears indurated. The uterus is in the midline position and is soft and tender to palpation. There is bilateral adnexal fullness and moderate tenderness.

Laboratory evaluation includes positive GC, negative RPR and WBC 17.6 with a left shift. Urinalysis is remarkable for few WBCs, no bacteria, no leukocyte esterase, no nitrates, 3+ ketones and negative urine HCG.

COMPETENCY-BASED DISCUSSION & KEY TEACHING POINTS:

Competencies addressed:
- Patient Care
- Medical Knowledge
- Interpersonal and Communication Skills
- Systems-Based Practice

1. What is your differential diagnosis for acute abdominal pain in a sexually active female?
   - Salpingitis, appendicitis, ruptured ovarian cyst, ovarian torsion, ectopic pregnancy, acute pelvic inflammatory disease

2. What is the most likely diagnosis in this case?
   - Acute pelvic inflammatory disease (PID)

3. What are the most likely organisms responsible for this condition?
   - Likely pathogens include *N gonorrhoeae*, *C trachomatis*, anaerobes, gram positive and negative bacteria and streptococci. Because of the polymicrobial nature of pelvic inflammatory disease (PID), all treatment regimens must provide broad-spectrum coverage.

4. What are the common presenting signs and symptoms for this condition?
   - The most common presenting complaint of women with PID is lower abdominal pain.
   - Associated symptoms include vaginal discharge, irregular bleeding, dysmenorrhea, dyspareunia, dysuria, nausea, vomiting and fever.
   - Pelvic pain, fever and vaginal discharge are the most common findings if PID is secondary to gonococcal infection. Patients may be asymptomatic if chlamydia is the causative organism. Women who have gonococcal infection have evidence of more acute inflammation (peritoneal signs, fever, leukocytosis) than those who have nongonococcal infection because of the endotoxin produced by *N gonorrhoeae*.
   - The clinical criteria necessary for the diagnosis of PID include:
     - Abdominal tenderness +/- rebound
     - Adnexal tenderness
     - Cervical motion tenderness
     - Plus one or more of the following: Gram stain of endocervix positive for Gram negative intracellular diplococci, temperature >38 degrees C, WBC>10,000, pus on culdocentesis or laparoscopy, pelvic abscess on bimanual exam or ultrasound
     - Most women with acute PID present during the first half of the menstrual cycle. Presentation later in the cycle indicates an infection of longer duration and increases the likelihood of a tuboovarian abscess (TOA).
• Atypical presentations of PID are common and complicate the differential diagnosis. For example, the symptoms of Fitz-Hugh-Curtis syndrome (right upper quadrant pain caused by liver capsule inflammation) may mimic hepatitis or cholecystitis.

5. What is the definitive diagnostic tool for equivocal cases?

• Laparoscopic findings of inflamed, dilated fallopian tubes, with purulent discharge

6. What criteria will you use to determine inpatient vs. outpatient treatment of PID?

• The decision to hospitalize a patient should be based on provider clinical judgement. However, in the following situations patients should be hospitalized:
  § Surgical emergencies (e.g., appendicitis) cannot be excluded
  § Patient is pregnant
  § Patient does not respond clinically to oral antimicrobial therapy
  § Patient is unable to follow or tolerate an outpatient oral regimen
  § Patient has severe illness, nausea and vomiting, or high fever
  § Patient has a tubo-ovarian abscess

7. What is your management and follow-up plan?

• Treatment for both chlamydia and gonorrhea
• Different regimens are adequate
  • Outpatient treatment: ceftriaxone 250 mg IM plus 14 days of doxycycline 100 mg po BID.
  • Inpatient treatment: cefotetan 2 gms IV q 12 hours plus doxycycline 100 mg IV/po q 12 hours until > 24 hours of clinical improvement, then continue outpatient regimen for a total of 14 treatment days
  • All patients who are managed as outpatients must be reevaluated within 72 hours of the initiation of antibiotics. If there is not significant improvement in symptoms, hospitalization for re-evaluation should occur.
  • Sex partners of PID patients should be examined and treated if they had sexual contact with the patient in the 60 days prior to the onset of symptoms.
  • Partners should be treated empirically for *N gonorrhoeae* and *C trachomatis*, regardless of the apparent etiology of the PID or pathogens isolated from the infected woman. Without treatment of infected partners, risk of reinfection is high.
  • Repeat cultures are recommended about 3-4 weeks after treatment of Chlamydia infection to confirm treatment efficacy and rule out asymptomatic reinfection.

8. If this condition went untreated, what would be the possible sequelae?

• Pelvic adhesions, tubal occlusion, chronic pelvic pain, ectopic pregnancy, infertility

9. How would one rule out a diagnosis of UTI in this patient?

• The patient should be questioned about any history of urgency, frequency, dysuria, or nocturia.
• Pyuria and bacteriuria on a microscopic exam markedly increase the chances that a patient has a UTI. A urine dipstick which is leukocyte esterase positive is also suggestive that a patient may have a UTI. Since this patient only had pyuria, no bacteriuria and urine dipstick for leukocyte esterase and nitrites was negative, it is unlikely that she has a UTI.
10. What are some STI prevention strategies?

- Abstinence
- Male and female condoms
- Pre-exposure vaccination: Gardasil and Cervarix are HPV vaccines that can prevent transmission of some of the most common strains of HPV. The CDC recommends the hepatitis B vaccine for all unvaccinated, uninfected persons being evaluated for an STI. Partner treatment: when partners are treated, patients have reduced risk for reinfection. Patients with STIs should be encouraged to notify their sex partners and urge them to seek medical evaluation and treatment.

REFERENCES


Centers for Disease Control and Prevention. Sexually Transmitted Disease Treatment Guideline 2006. www.cdc.gov/std/treatment/