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Evaluation of PID

Pelvic inflammatory disease (PID) is the **most frequent gynecology cause of ED visits**, accounting for over 350,000 visits a year. Of these visits, 20% occur among adolescent girls and can have serious downstream complications affecting their reproductive health including **ectopic pregnancy, infertility, and chronic pelvic pain**. It is critical to diagnose and treat PID early and appropriately to prevent these long-term sequelae.

PID is an infection involving the female upper genital tract and can lead to **endometritis, salpingitis, oophoritis, pelvic peritonitis, and perihepatitis**. It results from disruption of both the vaginal flora (predominantly *Lactobacillus acidophilus*) and the endocervical canal. Risk factors for developing PID include **early age at first intercourse, non-barrier contraception, high number of sexual partners, and previous episode of PID**. The most common pathogens are **Neisseria gonorrhea and Chlamydia trachomatis** and account for 80% of cases. Although many gonorrhea and chlamydia infections are **asymptomatic**, 15% of infections due to these pathogens result in PID. While the numbers of these infections are increasingly seen in the ED, it is critical to assess for the potential of PID in these patients.

The diagnosis of PID is often challenging to make by ED physicians due to the non-specific nature of the common signs and symptoms. Over 90% of patients present with **bilateral lower abdominal pain, most commonly within the first seven days of menses (75% of cases)**. This is due to the quality of cervical mucus, which favors vaginal bacteria ascension. New vaginal discharge is present in 75% of cases and one-third of patients can present with abnormal uterine bleeding. It is important to note that only 50% of those with PID present with fever. The most useful component to diagnosis is pelvic examination. **Mucopurulent discharge, cervical motion tenderness, and bilateral adnexal tenderness** are highly suggestive of PID. Additionally, elevated ESR/CRP, temperature >101 degrees F and documented infection with N. gonorrhea or C. trachomatis help aid in the diagnosis. It is important to note that an elevated WBC count is not a criterion for diagnosis (less than two-thirds of women with PID present with WBC >10,000).

Unlike in the past, a majority of women are treated as an outpatient. Only 10-25% are hospitalized with PID. Indications for admission include **pregnancy, lack of response or intolerance to oral medication, non-adherence, severe clinical illness, pelvic abscess, and possible surgical intervention**. Treatment consists of a **14-day course of antibiotics** with a clinical cure of over 90% of cases. Outpatient regimens include **Ceftriaxone (250mg) plus doxycycline (100mg) PO x 14 days**. The most effective parenteral therapy on admission is **clindamycin plus gentamicin**. Most patients admitted for parenteral therapy can be transitioned to oral therapy to complete the 14-day course 24 hours after sustained clinical improvement. It was found in a study that **only 37% of PID cases were treated according to CDC guidelines, with a majority of clinicians treating with ceftriaxone and azithromycin instead of the recommended ceftriaxone plus doxycycline**.

There are frequent chronic complications due to scarring and adhesion formation as organs heal that includes chronic pelvic pain, infertility, and ectopic pregnancy. Acute complications include **tubo-ovarian abscess** (1/3 of patients may experience this), where purulent material reaches the ovary by way of the fallopian tube. This can lead to worsening abdominal pain, fever, and unilateral adnexal tenderness. It can be a surgical emergency and life-threatening if abscess rupture occurs. **Fitz-Hugh-Curtis syndrome** (affects up to ¼ of diagnosed women with PID) refers to perihepatitis due to peritoneal dissemination of PID, which causes inflammation/swelling of the liver capsule. PID is one of the leading causes of abdominal pain in women presenting to the ED and appropriate diagnosis and treatment is crucial in preventing long-term complications.

References // Further Reading:

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