Chlamydia Infection in women

Chlamydia is the most common bacterial STD in Ireland. Approximately 10% of patients who attend for STD screening are diagnosed with this infection. Over 6000 cases were reported by the HPSC in 2011, the majority of which occur in those aged 20-29 years.

More than 70% of genital chlamydia infections in women do not produce signs or symptoms. Because most chlamydia infections in women are asymptomatic, symptoms and abnormal findings are not a good predictor of infection. In addition, when symptoms are present (e.g. vaginal discharge, postcoital bleeding caused by chlamydial cervicitis), they are usually mild and non-specific and may not prompt the patient to seek care. If symptoms occur, they may appear within 2-4 weeks after exposure. The physical findings most commonly associated with chlamydia infection include mucopurulent cervicitis (MPC) and/or cervical friability (i.e., cervical bleeding easily induced by a soft cotton swab). Acute infections also can manifest themselves as urethritis, proctitis, and conjunctivitis.

Complications in Women
The medical consequences and costs of infection are greatest in women, who because of undetected and untreated disease, are at greatest risk of developing serious short-term and long-term complications. Untreated chlamydia infection can lead to pelvic inflammatory disease (PID), ectopic pregnancy, infertility, chronic pelvic pain, and increased susceptibility to HIV. Chlamydia is also associated with neonatal complications and infections in non-genital sites.
Up to 40% of women with untreated chlamydia will develop PID, the leading cause of preventable infertility in the U.S. Approximately 20% of patients with PID will become infertile, 6% will have ectopic pregnancies and 18% will suffer chronic pelvic pain. In addition, chlamydia may contribute substantially to the spread of heterosexually acquired HIV infection.

Sexual Behavior Can Put Women at Risk
For some women, their behaviors put them at risk for chlamydia infection.[3] Behavioral risk factors include:
- new or multiple sex partners,
- inconsistent use of condoms,
- oral contraceptive use

Besides sexual behavior, cervical ectopy is more common in younger women and increases the accessibility of chlamydia’s target cells (columnar epithelial cells) to infection.
Other women are at risk for infection because of their partner’s behavior. The majority of women diagnosed with chlamydia report being in a monogamous relationship. These women may not be aware that their partner has other sexual partners.

Benefits of Chlamydia Screening
The benefits of chlamydia screening include detection of asymptomatic infection, prevention of PID, and reduction of prevalent infection. Because chlamydial infections are typically asymptomatic, early identification through screening and subsequent treatment can significantly reduce the medical short- and long-term complications in women and has been shown to be cost-effective. Opportunistic screening could be offered to women at the time of Cervical screening. A randomized controlled trial of chlamydia screening and treatment in a managed care organization demonstrated a 56% reduction in the incidence of PID in the 12 months following this intervention.

**Diagnosis of Chlamydia**
The best diagnostic and screening tests are the nucleic acid amplification tests (NAATs). Amplified testing is preferred because of increased sensitivity, ease of specimen collection and patient acceptability. NAATs provide excellent sensitivity (90-95%) and specificity (98-100%). These tests are based on a variety of technologies: polymerase chain reaction (PCR), ligase chain reaction (LCR), transcription mediated amplification (TMA), and strand displacement amplification (SDA). The development of NAATs has markedly improved our ability to diagnose chlamydial infections by identifying up to 40% more chlamydial infections compared to other test technologies.

**TREATMENT REGIMENS**
The current CDC recommendations for the treatment of uncomplicated chlamydial infection:

- **azithromycin** 1 gram orally in a single dose
- **OR** doxycycline 100 mg orally 2 times a day for 7 days.

The results of clinical trials indicate that azithromycin and doxycycline are probably equally effective (94.9% and 95.9%) in eradicating infection. Azithromycin is probably more cost-effective in populations with poor treatment compliance or uncertain follow-up because it provides the opportunity for single-dose, directly observed therapy. Doxycycline has the advantage of low cost and a longer history of extensive use but has the disadvantages of a longer course and resultant problems with adherence.

**Treatment Precautions**
To minimize further transmission of infection, patients treated for chlamydia should be instructed to abstain from sexual intercourse for 7 days after the single dose therapy or until completion of the 7-day regimen. Furthermore, patients should be instructed to abstain from sexual intercourse until 7 days after all of their sex partners have been treated to minimize risk for re-infection. Test of cure is advised in select population such as pregnant women. A full STD screen should be offered to the patient as frequently patients are coinfected with other STDs.

**PARTNER MANAGEMENT**
All sexual partners within the last 2 months should also be evaluated, tested and treated. No person with genital chlamydial infection can be considered adequately treated until all of his or her sex partners have also been treated. Since chlamydia is efficiently transmitted and diagnostic tests are not 100% sensitive, it is recommended that all partners within the past 2 months receive treatment regardless of their test result. Resumption of sex with an untreated partner is considered the most common cause of repeat infection, which conveys a higher risk of complications.

Partners are often asymptomatic and therefore may not seek treatment without being notified.

**Chlamydia in pregnancy**

The reported prevalence of chlamydia infections in pregnancy range from 5-30% depending on age and other risk factors. Pregnant women infected with chlamydia, like non-pregnant women, are at risk for cervicitis, urethritis and pelvic inflammatory disease. Chlamydia infections during pregnancy can also cause chorioamnionitis and post-partum endometritis and may be associated with gestational bleeding, premature rupture of membranes and preterm labor and delivery.

Perinatal transmission and neonatal complications of chlamydia occur in up to 50% of newborns whose mothers were infected with chlamydia at delivery. Exposed infants are at risk for conjunctivitis (20-50% of exposed) and neonatal pneumonia (10-20% of exposed).

**Treatment of chlamydia in pregnancy**

**Recommended:**
- Azithromycin 1g p.o. x 1
- Amoxicillin 500 mg p.o. tid x 7 days
- Erythromycin base 500 mg p.o. qid x 7 days

**Alternative:**
- Erythromycin base 250 mg p.o. qid x 14 days
- Erythromycin ethylsuccinate 800 mg p.o. qid x 7 days
- Erythromycin ethylsuccinate 400 mg p.o. qid x 14 days

**Test of cure should be routine 3-4 weeks post initiation of therapy**

**Prevention - The 5 Ps**

One simple framework for taking a sexual history focuses on the 5 P’s: Partners, Prevention (of pregnancy), Protection (from STDs), Practices, and Past STDs.

**Reference:**
http://www.hpsc.ie/hpsc/AZ/HIVSTIs/SexuallyTransmittedInfections.

Sexually Transmitted Diseases Treatment Guidelines, 2010
Recommendations and Reports
December 17, 2010 / 59(RR12);1-110