# Non-HIV sexually transmitted infections in pregnancy

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## Abstract

Sexually transmitted infections (STIs) are common, especially in young women, and pregnant women are inherently at risk. In pregnancy, sexually transmitted infections can have serious consequences for the woman, the fetus and neonate yet may remain asymptomatic throughout. Screening for many STIs is not explicit in UK antenatal guidelines and may be overlooked. Therefore it is essential to consider a woman's risk of STIs regularly throughout pregnancy and know how and when to undertake an appropriate sexual history and relevant testing. Early diagnosis and treatment, partner notification and multidisciplinary management together with genitourinary physicians and paediatricians are key to securing good outcomes for mother and child.

This article reviews the presentation, diagnosis and management of non-HIV STIs in pregnancy, highlighting indications for testing and important differences compared with management of non-pregnant women.

**Keywords** chlamydia; gonorrhoea; pregnancy; sexually transmitted infections; syphilis

## Introduction

Sexually transmitted infections (STIs) have a heterogeneous distribution and are increasing in prevalence nationally and globally. The World Health Organisation (WHO) 2008 figures estimate the following numbers of new cases and global prevalence: *Trichomoniasis vaginalis* (276.4 million, 7.8%), *Chlamydia trachomatis* (105.7 million, 3%), *Neisseria gonorrhoeae* (106.1 million, 3%) and Syphilis (10.6 million, 0.3%). The UK national survey of sexual attitudes and lifestyles 2013 (Natsal) undertook urine testing for chlamydia and gonorrhoea among participants and revealed a prevalence of 1.5% and <0.1% respectively among women of all ages. These rose to 4.7% and 0.2% in under 25 age groups.

Many STIs can be asymptomatic and yet in pregnancy can have catastrophic consequences for the woman and fetus. Ascending infection in pregnancy can lead to chorioamnionitis and subsequent premature rupture of membranes, preterm delivery, low birth weight and maternal sepsis. Fetal infection can arise via transplacental, intrapartum or postpartum transmission.

Initial screening for HIV, syphilis and hepatitis B and C are part of routine antenatal blood tests, taken ideally before 10 weeks, as recommended by NICE guidance. However diagnosis of more common STIs such as chlamydia or herpes rely on women self-screening, presenting with symptoms or on history alone. Therefore clinicians must retain a high index of suspicion for STIs throughout antenatal and postnatal care. Risk factors for STIs include age under 25, high number of sexual partners and any new sexual partners in pregnancy, diagnosis of any other STI, country of origin with high prevalence, intravenous drug use, and commercial sex. A careful sexual history should be taken at the start of pregnancy to establish a woman's risk and identify any high risk partners, such as those with known or suspected STIs or men who have sex with men (MSM). This should be revisited regularly and used to initiate further screening tests as appropriate (Table 1).

The key principles to successfully managing STIs in pregnancy are early diagnosis and effective treatment together with minimising the risk of re-infection and vertical transmission. Partner notification and treatment, abstinence during and post treatment and risk reduction are important and common to the management of all STIs. Management in pregnancy may differ depending on gestation, stage of infection and contraindication to drugs and test of cure (TOC) is often advised. Mode of delivery is not commonly influenced by the presence of an STI with the exception of herpes. Neonatal management may be determined on mode of delivery and the condition of the baby. Multidisciplinary working with genitourinary physicians and paediatricians is therefore vital to optimising outcomes for the mother and child.

## Chlamydia

Genital chlamydia infection is caused by the obligate intracellular pathogen *Chlamydia trachomatis* and is the most common bacterial STI in the UK with a peak of almost 1 in 20 women infected in the 18–19 age group. The cervix is the most commonly infected site in women but the urethra, throat and rectum may also be infected. Concurrent infection of urogenital and anorectal sites are estimated up to 77% but there is scarce data as to rates of pharyngeal infection in women. 85% of women are asymptomatic although may present with postcoital bleeding, lower abdominal pain, purulent vaginal discharge, cervicitis, proctitis or dysuria. Untreated, Chlamydia can persist for years leading to a wide range of complications including pelvic inflammatory disease (PID), ectopic pregnancy, tubal factor infertility and chronic pain.

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## STI testing

| STI | Test | When to test |
|---|---|---|
| Chlamydia | • Nucleic Acid Amplification Test (NAAT)<br>• vulvovaginal or endocervical swabs (clinician or self-taken)<br>• Pharyngeal or rectal swabs if sexual history indicates<br>• Window period typically 2 weeks | • At booking appointment in under 25s<br>• If any new sexual partner<br>• Regularly if any high risk partner<br>• Diagnosis of another STI<br>• If symptomatic (focal or signs of sepsis)<br>• After 6 weeks post treatment with azithromycin<br>• After 5 weeks post treatment with alternative regimens<br>• In 3rd Trimester if tested positive earlier in pregnancy<br>• Neonatal conjunctivitis or pneumonia |
| Gonorrhoea | • NAAT<br>• vulvovaginal or endocervical swabs (clinician or self-taken)<br>• Confirmatory culture and sensitivities<br>• Pharyngeal or rectal swabs if sexual history indicates<br>• Window period typically 2 weeks | • At booking appointment in under 25s<br>• If any new sexual partner<br>• Regularly if any high risk partner<br>• Diagnosis of another STI<br>• If symptomatic (focal or signs of sepsis)<br>• After 72 hours post treatment if symptoms persist<br>• After 2 weeks post treatment if asymptomatic<br>• In 3rd Trimester if tested positive earlier in pregnancy<br>• Neonatal conjunctivitis or neonatal sepsis |
| Trichomoniasis | • Microscopy of vaginal secretions from posterior fornix mixed with saline and culture<br>• May find on high vaginal self-taken swab<br>• NAAT more sensitive and becoming increasingly available | • Regularly if any high risk partner<br>• Diagnosis of another STI<br>• vaginal discharge or vulvitis |
| Syphilis | • IgM and IgG serology<br>• Dark Ground microscopy<br>• Cardiolipin RPR/VDRL test to monitor response to treatment<br>• Polymerase Chain reaction (PCR) limited availability | • At booking appointment<br>• Any genital ulceration<br>• If any new sexual partner<br>• Diagnosis of another STI<br>• Repeat testing at 6 weeks and 3 months if high risk exposure or ulceration and initial testing negative |
| Genital Warts | • Clinical diagnosis | |
| Genital Herpes | • PCR of vesicle fluid on viral swab<br>• Herpes Simplex Virus (HSV) type specific antibody test | • Any genital ulceration<br>• Suspected/known HSV positive partner<br>• Genital ulceration in 3rd Trimester |
| Hepatitis A,B,C | • Serology | • High risk groups (Sex workers, sexual assault, anal sex, oro-anal sex and sexual acts likely to break mucosal barrier)<br>• Prodromal or icteric symptoms or signs of chronic liver disease |
| HIV | • HIV antibody AND p24 antigen blood test<br>• Window period typically 4—5 weeks | • At booking appointment<br>• Any new sexual partner<br>• Regularly if high risk partner<br>• Diagnosis of another STI and retest 4 weeks after last episode of sex without condom use |

**Table 1**