
*West of Scotland Guideline* *Approved February 2022*

# PREGNANCY - STIs & GROUP B STREPTOCOCCAL COLONISATION

## What's New

The current version is unchanged from the previous version (November 2019).

## CONTENTS

## Introduction

Many STIs (Sexually Transmitted Infections) can adversely affect the fetus and be more troublesome in pregnancy.

This guideline is designed to:

- highlight important issues about the impact of common STIs on the pregnant woman and her child who may be exposed either in utero or during the birthing process.
- highlight any management recommendations which may be different in pregnancy compared to the non pregnant state. This guideline should be used in conjunction with the guideline specific to the STI in question.

It is beyond the remit of this guideline to advise on the management of HIV and hepatitis B during pregnancy.

Group B Streptococcus (GBS) is recognised as the most important cause of severe early onset infection in newborn babies. GBS is not a sexually transmitted infection but since maternal Group B Streptococcal carriage in pregnancy is 50% guidance is included to assist with the management of pregnant woman in whom GBS is considered to be an incidental finding.

## General Points

- Discuss with the client the advantages of details regarding a diagnosis of an STI being included within her maternity record and where permission is granted inform her obstetric team.
- The physiology of pregnancy can alter the natural history of an STI.
- It is safe to perform vaginal examination in the pregnant woman, and to take cervical swabs.
- **No** woman should be given **doxycycline, quinolones (for example ciprofloxacin, ofloxacin)** or treated with **podophyllotoxin** or **imiquimod** preparations unless the clinician is assured she is at no risk of pregnancy.
- Partner notification is essential to reduce the possibility of re-infection of a pregnant woman (and unborn child).
- It should not be assumed that every women presenting with a diagnosis or symptoms suggestive of an STI in pregnancy has had HIV / syphilis testing as part of antenatal testing. She may have opted out of testing or not yet had her booking bloods and testing should be offered. Even for women tested earlier in the pregnancy for HIV and syphilis the diagnosis of an STI may indicate repeat HIV and syphilis testing is warranted.
- Patients planning a pregnancy should also be encouraged to be tested for HIV and syphilis.
- The finding of GBS in the vagina or urine of a woman who is pregnant is significant and this information needs to be shared with the obstetric team involved in her care.

## Bacterial Vaginosis

- Bacterial vaginosis (BV) may increase risk of late miscarriage, preterm birth, premature rupture of membranes and post partum endometritis.
- There is no evidence to support screening asymptomatic women, including asymptomatic pregnant women, for BV.
- Symptomatic pregnant women should be treated in the usual way apart from avoiding high doses regimens of metronidazole (metronidazole 400mg oral twice daily 5-7 days). No teratogenic or mutagenic effects in infants have been found with metronidazole.
- Women with asymptomatic BV in pregnancy should be discussed with the woman's obstetrician as the evidence regarding the treatment of BV to prevent adverse outcomes in pregnancy is conflicting.

## Chlamydia

- Recent studies show an association between chlamydia and preterm birth and low birth weight; they also suggest an increased risk of complications the earlier in the pregnancy the infection occurs.
- Infants who are born vaginally to mothers with untreated genital *chlamydia trachomatis* infection are at risk for developing *C. trachomatis* conjunctivitis (15 to 50 percent) and/or pneumonia (5 to 30 percent).
- Untreated infants may have persistent conjunctivitis for months that may result in corneal and conjunctival scarring.
- Up to 1/3 of woman with chlamydia delivering vaginally will develop puerperal infection.
- Azithromycin use in pregnancy remains off label but its use is recommended for uncomplicated genital, rectal and pharyngeal infection.
- The August 2017 BASHH statement highlighted concerns that some antibiotics (including azithromycin) use in pregnancy maybe associated with an increase in spontaneous abortion. The clinical effective group (CEG) sees no reason at the present time to change recommendations in its current guidelines for treating genital infections in pregnancy based on this recent publication. Azithromycin is more effective and better tolerated than alternative antibiotics for genital chlamydia. The potential risks and benefits of treatment options should be discussed with the patient and this should be documented in the clinical notes. https://www.bashhguidelines.org/media/1151/ceg-statement-antibiotics-in-pregnancy.pdf
- When using azithromycin (as in the non pregnant patient) the recommended dose is 1g orally as a single dose, followed by 500mg once daily for two days. Alternative regimens are erythromycin 500mg four times daily for seven days, erythromycin 500mg twice daily for 14 days or amoxicillin 500mg three times a day for seven days https://www.bashhguidelines.org/current-guidelines/urethritis-and-cervicitis/chlamydia-2015/
- Doxycycline should not be used in pregnancy.

- A test of cure should be performed and this is crucial in rectal infection. A test of cure should be done no earlier than three weeks after completing treatment
- A repeat test at 36 weeks gestation is recommended to exclude re-infection.

## Genital Warts

- Genital warts often become more florid during pregnancy and may cause immense distress.
- Sensitive counselling is needed including encouraging the pregnant women to discuss her fears with her midwife.
- Treatment may not always be warranted but aims to reduce the number of lesions present at delivery and therefore reduce the neonatal exposure to the virus.
- Do not use podophyllotoxin or imiquimod treatment in pregnancy.
- Cryotherapy can be offered but this may not eliminate or even control the outbreak.
- Caesarean section delivery is only indicated if vulval or vaginal warts obstruct the birth canal, as the lesions may avulse and haemorrhage or cause dystocia during an attempted vaginal delivery.
- Caesarean section is not indicated to prevent vertical transmission. The only serious, rare complication is recurrent respiratory papillomatosis in the infant which occurs in about 4/100 000 births.
- Warts often spontaneously resolve in the weeks following delivery.

## Gonorrhoea

- Gonorrhoea has been shown to be associated with preterm rupture of membranes, preterm birth and low birth weight. There may be a greater rate of complications the earlier in pregnancy the infection occurs.
- Newborns may acquire gonococcal infection during delivery. The perinatal transmission rate is about 30 to 40 percent in women with cervical infection. Intrauterine infection also can occur after rupture of the membranes.
- In the newborn, the eye is the most frequent site of gonococcal infection and is typically characterized by a purulent conjunctivitis with a profuse exudate and swelling of the eyelids. Without treatment, the infection can extend leading to ulceration, scarring, and visual impairment.
- Other localized gonococcal infections include infections of other mucosal surfaces (pharynx, vagina, urethra, and anus) and scalp abscess.
- In newborns, systemic gonococcal infection (eg, septic arthritis, sepsis, and/or meningitis) is rare and is usually a complication of localised infection.
- Gonorrhoea increases the risk of post partum infection which can be severe.
- Cefixime and ceftriaxone are probably safe in pregnancy.
- Do not use quinolones (for example ciprofloxacin) in pregnancy.
- For penicillin allergic clients, consult senior colleague for advice.
- Test of cure should be offered 3 weeks after treatment.
- A repeat test at 36 weeks gestation is recommended to exclude re-infection.

## Herpes Simplex

Refer all clients presenting with genital HSV in pregnancy to a senior clinician experienced in the management of genital HSV in pregnancy. There should be liaison with the patient's obstetric team.

- The incidence of neonatal Herpes Simplex Virus (HSV) infection in the UK is 1.65 in 100 000 live births annually (1986 to 1991). Subsequent surveillance from 2004 to 2006 showed an approximate doubling of incidence.
- Neonatal herpes although rare is serious with high morbidity and mortality. It is classified into three subgroups in the infant depending on the site of infection:
    - Disease localised to the skin, eye and / or mouth
    - Local central nervous system (CNS) disease (encephalitis alone)
    - Disseminated infection with multiple organ involvement
- Disease localised to the skin, eye and / or mouth represent approximately 30% of neonatal infections and have the best prognosis. With appropriate antiviral treatment, neurological and / or ocular morbity is less than 2%
- Local CNS and disseminated infection represent approximately 70% of neonatal infections. With antiviral treatment, mortality from local CNS disease is around 6% and neurological morbity around 70%. Disseminated disease with antiviral treatment carries a 30% morality and 17% have long term neurological sequelae. Disseminated herpes is more common in preterm infants and occurs almost exclusively as a result of primary infection of the mother.
- Neonatal herpes may be caused by HSV-1 or HSV-2.
- Most cases of neonatal herpes occur from direct contact with infected maternal secretions, although in 25% of cases, a possible source of postnatal infection was identified, usually a close relative. Post natal infection may occur as a result of exposure to oro-labial herpes infection.
- Rarely congenital herpes may occur as a result of transplacental infection.
- Factors that may influence perinatal transmission include the type of maternal HSV infection (primary versus recurrent), the presence of transplacental maternal neutralising antibodies, duration of ruptured membranes, use of fetal scalp monitors and mode of delivery.
- The risk are greatest when a women acquires a new infection (primary genital herpes) in the third trimester, particular within 6 weeks of delivery, as viral shedding may persists and the baby likely to be born before the development of protective maternal antibodies.
- Although recurrent herpes is associated with a very low risk of neonatal herpes, recurrent herpes at the time of delivery, which is commonly asymptomatic or unrecognized, may cause localised forms of neonatal herpes: both local CNS disease and skin, eye and mouth infection.
- Disseminated herpes infection in adults is rare though it has been more commonly reported in pregnancy, particularly in the immunocompromised.
- Although aciclovir is not licensed for use in pregnancy, there is substantial clinical experience supporting its safety

**The following is only a summary of key areas:**

**First and Second Trimester Acquisition (until 27th completed weeks of pregnancy)**

- There is no evidence of an increased risk of spontaneous miscarriage with primary genital herpes in the first trimester.
- There is no evidence that HSV acquired in pregnancy is associated with congenital abnormalities.
- Treatment should not be delayed and should be in line with the clinical condition and will usually involve the use of oral (or intravenous aciclovir) in standard doses (oral aciclovir 400mg three times daily usually for 5 days).
- Paracetamol and topical lidocaine2% gel can be offered for symptomatic relief.
- The obstetrician needs to be informed this is a new infection in pregnancy, preferably in writing.
- Women with suspected genital herpes who are having midwifery–led care should be referred for review by an obstetrician.
- Providing delivery does not ensue within the next 6 weeks, the pregnancy should be managed expectantly and vaginal delivery anticipated.
- Following first or second trimester acquisition daily suppressive aciclovir 400mg three times daily from 36 weeks gestation reduces HSV lesions at term and hence the need for delivery by caesarean section. It has also been shown to reduce asymptomatic viral shedding.

**Third Trimester Acquisition (from the 28th week of pregnancy)**

- There is some evidence for increased peri-natal mortality (preterm labour, low birth weight, stillbirth) however the data are conflicting so no additional monitoring of the pregnancy is recommended.
- Treatment should not be delayed and should be in line with her clinical condition and will usually involve the use of oral (or intravenous aciclovir) in standard doses (oral aciclovir 400mg three times daily usually for 5 days).
- Usually women in the third trimester will continue daily suppressive acyclovir at 400mg three times daily until delivery.
- The obstetrician needs to be informed urgently and a plan made for delivery.
- Caesarean section is the recommended choice of delivery for all women presenting with the first episode of genital herpes in the third trimester, particularly within 6 weeks of expected delivery as the risk of neonatal transmission of HSV is very high at 41%.
- It can be difficult to distinguish between primary and recurrent HSV infections. In up to 15% of cases of women presenting as a first episode of clinical HSV, it will actually be a recurrent infection. Type specific HSV antibody testing (immunoglobulin G antibodies to HSV-1 and HSV -2) may be available from Colindale, London after discussion with local virology services. The presence of antibodies of the same type as the HSV isolated on genital swabs would confirm this episode to be a recurrence rather than a primary episode. However it may take 2-3 weeks for results of this test. It is therefore recommended that an initial plan of delivery should be based on the assumption that all first episodes are

primary genital herpes. Interpretation of serology can be complicated; results should be discussed with virologists or genitourinary physician.

- If vaginal delivery is unavoidable or where the mother opts for a vaginal delivery refer to RCOG guidance for further information.
- The neonatologist should be involved in advance of delivery.

**Recurrent Genital Herpes (initial episode predates pregnancy)**

- Women with recurrent genital herpes should be informed that the risk of neonatal herpes is low, even if lesions are present at the time of delivery (0-3% for vaginal deliveries).
- There is no increased risk of preterm labour, premature rupture of membranes, fetal growth restriction or congenital abnormalities associated with women seropositive for HSV.
- The majority of recurrent episodes of genital herpes are short lasting and resolve within 7-10 days without antiviral treatment.
- Vaginal delivery should be anticipated in the absence of other obstetric indications for caesarian section.
- Daily suppressive aciclovir 400mg three times daily should be considered from 36 weeks. There is insufficient evidence to determine whether this reduces the incidence of neonatal herpes: however it reduces viral shedding and recurrences at delivery so may reduce the need for caesarian section. The risks, benefits and alternatives to daily suppressive therapy should be discussed with women and prophylaxis initiated for women who desire intervention.
- The increase from the standard suppressive dose of 400mg twice daily is recommended in view of the greater volume of distribution of the drug during pregnancy.

**Management of Women with primary or recurrent genital lesions at onset of labour**

This is beyond the scope of this guidance. Refer to Joint RCOG / BASHH guidance.

**Genital herpes in preterm prelabour rupture of membranes (before $37^{+0}$ weeks of gestation)**

This is beyond the scope of this guidance. Refer to Joint RCOG / BASHH guidance.

**Management of HIV positive women with HSV infection**

This is beyond the scope of this guidance. Refer to Joint RCOG / BASHH guidance.

**Management of Neonate**

This is beyond the scope of this guidance. Refer to Joint RCOG / BASHH guidance

**Prevention of post natal transmission**

In 25% of cases of neonatal herpes a postnatal source may be responsible for infection. This is usually a close relative. All those with herpetic lesions who may be in contact with the neonate, including staff, should practice careful hand hygiene. Those with oral herpetic lesions (cold sores) should not kiss the neonate.

## Syphilis

- All pregnant women should have serological testing for syphilis at their first antenatal assessment. Tests should be repeated later in pregnancy if a woman has been at risk of infection after a negative initial screen.
- In the UK in 2011 approximately 0.15% of women had a positive antenatal test. Of these:
    - 46% had been adequately treated for syphilis before conception
    - 23% had false positive tests
    - 21% were diagnosed and required treatment for the first time during the current pregnancy
- Although fetal infection usually occurs late in pregnancy it has been demonstrated as early as 8-9 weeks of gestation. This may result in polyhydramnios, miscarriage, preterm labour, still birth and hydrops.
- In untreated early syphilis 70-100% of infants will be infected, with still births occurring in up to one third of cases.
- Ten percent of infants born to mothers with late infection will be affected.
- Babies born with congenital syphilis can have early manifestations of the disease (within the first 2 years of life) or late manifestations (after 2 years of life) including the stigmata of congenital syphilis.
- Syphilis in pregnancy should be managed as clinically urgent and requires a multi disciplinary approach between Sexual Health, Obstetrics and Fetal medicine/ Paediatrics.
- It has to be clearly established who is the Sexual Health clinician responsible for coordinating the treatment of the pregnant women and who has responsibility for liaising with the neonatologist.
- Where syphilis was cured prior to current pregnancy the RPR/ VDRL titres should be checked at the first antenatal booking appointment and repeated at 28 weeks gestation. If the RPR/VDRL excludes reinfection and there is no ongoing risk of infection, the women requires no further treatment and there is no need for the neonate to undergo tests for syphilis.
- Retreatment of women with a history of syphilis treated before conception should be considered when
    - There is uncertainty about the adequacy of treatment based on history
    - Serological cure (ie a 4 fold drop in RPR/ VDRL titre) did not occur.
- A pregnant woman's treatment should be appropriate for the stage of syphilis diagnosed (see on line BASHH Syphilis guideline*) with comprehensive follow up to minimise the likelihood of her developing long term complications of untreated / inadequately treated syphilis.

    *If treating early syphilis in the third trimester a second dose of benzathine penicillin should be given one week later due to lower serum levels of the drug and risk of treatment failure

Treatment with macrolides is no longer a treatment option as it may result in treatment failure and transmission to neonate. For pregnant women who report intolerance or allergy to penicillin or other beta-lactam antibiotics please refer to the detailed BASHH on line guidance http://www.bashhguidelines.org/current-guidelines/genital-ulceration/syphilis-2015/ and consult with senior colleagues.

- The Jarisch-Herxheimer reaction may occur just as in non pregnant women. This may cause uterine contractions and fetal heart rate decelerations, as a result of maternal fever. There is a theoretical increased risk of spontaneous and iatrogenic preterm delivery and fetal demise associated with the reaction, though these complications are also associated with syphilis infection. Management should be supportive and include antipyretics. Steroids are not effective in reducing these effects.
- Additional fetal scanning and monitoring may be indicated. This should be discussed by the multi-disciplinary team.
- All children born to mothers with positive serology require referral to Fetal Medicine /Paediatricians for clinical evaluation and syphilis serology tests, with the following exceptions
    - maternal biological false positive serology
    - maternal syphilis cured prior to this pregnancy
- Treatment for congenital syphilis is needed in infants
    - born to mothers treated less than 4 weeks prior to delivery
    - suspected of having congenital syphilis
    - born to mothers treated with non penicillin regimens
    - born to mothers without documented evidence of adequate treatment
- Partner notification is essential to reduce the possibility of re-infection of a pregnant woman (and unborn child).Untested older siblings may need testing for syphilis.

## Trichomonas Vaginalis

Vaginal trichomoniasis has been associated with adverse pregnancy outcomes, particularly premature rupture of membranes, preterm delivery, and low birth weight but further research is needed to confirm these associations.

Pregnant woman can be treated regardless of the stage of the pregnancy although some clinicians have preferred to defer treatment until the second trimester.

Women can be treated with metronidazole 400mg twice daily for 7 days at any stage of pregnancy. Multiple studies and meta-analyses have not demonstrated an association between metronidazole use during pregnancy and teratogenic or mutagenic effects in infants. The safety of tinidazole in pregnant women, however, has not been well evaluated.

## Group B Streptococcal (GBS) Colonisation

- The likelihood of maternal GBS carriage in pregnancy is 50%.
- GBS can be passed from mother to baby. When this happens it can occasionally cause severe illness in the newborn (this is known as neonatal GBS).
- Only 1 in every 2000 newborn babies born in the UK and Ireland is diagnosed with neonatal GBS.
- Women in whom GBS has been found in the urine or swabs from the vagina (or rectum) taken for other reasons are likely to be offered antibiotics during labour**. It is important that the pregnant women and their obstetric team are made aware of the presence of colonisation.**
- Women with GBS in the vagina do not need antibiotics in pregnancy prior to labour unless they have a symptomatic infection (for example a urine infection).
- Women with GBS urinary tract infection during pregnancy should receive antibiotics at the time of diagnosis **(on discussion with the women's obstetric team)** as well as during labour.
- Antenatal prophylaxis for vaginal / rectal colonisation detected incidentally earlier in a pregnancy does not reduce the likelihood of colonisation at the time of delivery so is not recommended.
- There is no national screening programme for GBS in the UK as there is no clear evidence to show that screening all pregnant women in the UK would be beneficial overall.
- Vaginal swabs should not be taken in pregnancy unless there is a clinical indication to do so.
- The RCOG have written a patient information leaflet for women who are expecting a baby or planning to become pregnant about Group B Streptococcus infection which is available at

https://www.rcog.org.uk/globalassets/documents/patients/patient-information-leaflets/pregnancy/pi-groupb-streptococcus-gbs-infection-in-newborn-babies.pdf

## References

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