PREGNANCY - STIs & GROUP B STREPTOCOCCAL COLONISATION

CONTENTS

Introduction

This guideline is designed to:

- highlight the impact of common STIs on the pregnant woman and her child who may be exposed either in utero or during delivery
- Highlight any management recommendations which may be different in pregnancy
- 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 newborns. GBS is not a sexually transmitted infection but since present in the vagina of approximately a quarter of all pregnant woman, guidance is included to assist with the management of pregnant woman in whom GBS is considered to be an incidental finding.

General Points

- Discuss the advantages of details regarding diagnosis of an STI being included within maternity records and (where permission is granted) inform the obstetric team.
- It is safe to perform vaginal examination and take cervical swabs in the pregnant woman.
- **No** woman should be given **doxycycline, ciprofloxacin** or treated with **podophyllotoxin** or **imiquimod** preparations unless the clinician is assured there is no risk of pregnancy.
- Partner notification is essential to reduce the possibility of re-infection
- 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 warrant repeat HIV and syphilis testing.
- Patients planning a pregnancy should also be encouraged to be tested for HIV/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.

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; First line should be metronidazole 400mg oral twice daily 5days. The manufacturer recommends avoiding metronidazole 2g stat oral dose.

Metronidazole 400mg bd PO 5- days

- No teratogenic or mutagenic effects in infants have been found with metronidazole.
- Women with asymptomatic BV in pregnancy should be discussed with the 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 Trachomatis (CT) and preterm birth and low birth weight; they also suggest an increased risk of complications the earlier in the pregnancy the infection occurs.
- Infants born vaginally to mothers with untreated genital CT infection are at risk for developing CT conjunctivitis (15- 50%) and/or pneumonia (5-20 %).
- Up to 1/3 of woman with CT delivering vaginally will develop puerperal infection.
- Azithromycin use in pregnancy remains off label but its use is recommended for uncomplicated genital and pharyngeal infection.

Azithromycin 1g immediately then 500mg once on days 2 and 3. If azithromycin contraindicated use erythromycin 500mg twice daily for 14 days or amoxicillin 500mg three times daily for 7 days

- **Doxycycline should not** be used in pregnancy.
- A test of cure should be performed a minimum of 5-6 weeks after treatment.
- A repeat test at 36 weeks gestation is recommended.
- Partner notification should be undertaken.

Genital Warts

- Genital warts often present during pregnancy.
- There is the potential for vertical transmission to the fetus (up to 1 in 80 cases) in women who have human papilloma virus (HPV) in the genital tract, irrespective of whether wart lesions present or not.
- HPV may manifest in young children as mucosal, conjunctival, or laryngeal disease.
- Treatment does not appear to affect vertical transmission.
- **Do not use podophyllotoxin** or **imiquimod** in pregnancy.
- Cryotherapy can be offered but this may not be effective.

Consider Cryotherapy

- Caesarean section (C section) has not been proven to prevent the transmission of HPV and is only indicated if vulval or vaginal warts obstruct the birth canal.

Gonorrhoea

- Gonorrhoea has been shown to be associated with preterm rupture of membranes, preterm birth, low birth weight and post partum infection. There may be a greater rate of complications the earlier in pregnancy the infection occurs.
- The perinatal transmission rate is about 30 to 40 % 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. It is is typically characterized by a purulent discharge . 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 (e.g. septic arthritis, sepsis, and/or meningitis) is rare and is usually a complication of localized infection.
- Cefixime and ceftriaxone safety have not been established in pregnancy but are probably safe.

Ceftriaxone 500mg IM with Azithromycin 1g PO Stat

or

Spectinomycin 2g IM Stat with Azithromycin 1g PO Stat

(if unable to have IM injections/refuse – refer to BASHH guidelines)

- **Do not use ciprofloxacin** in pregnancy.
- For penicillin allergic clients, consult senior colleague for advice.
- Test of cure should be offered 2 weeks after treatment.
- A repeat test at 36 weeks gestation is recommended to exclude re-infection.
- Partner notification should be undertaken.

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.

Since 2014 in the UK we have Joint BASHH and RCOG Guidance for the Management of Genital Herpes in Pregnancy.

- The incidence of neonatal Herpes Simplex Virus (HSV) infection in the UK is 1 in 60 000 live births annually and 85% of neonatal HSV infections are acquired perinatally.
- HSV is acquired perinatally when HSV infection, either symptomatic or asymptomatic, is present in the genital tract of the pregnant woman at the time of delivery.
- Factors that may influence perinatal transmission include the type of maternal HSV infection (primary versus recurrent), maternal HSV antibody status, duration of ruptured membranes, use of fetal scalp monitors, and mode of delivery (C section versus vaginal).
- The mortality of untreated disseminated neonatal HSV exceeds 80%.
- 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 27+6 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 will usually involve the use of oral (or intravenous) aciclovir in standard doses (oral aciclovir 400mg tds usually for 5 days).
- The obstetrician/midwife needs to be informed.
- Women with suspected genital herpes who are having midwifery –led care should be referred for review by an obstetrician.
- In general a vaginal delivery should be anticipated provided that delivery does not ensue within the next 6 weeks.
- Following first or second trimester acquisition daily suppressive aciclovir 400mg tds from 36 weeks gestation reduces HSV lesions at term and has been shown to reduce asymptomatic viral shedding. Note that suppression doses are tds rather than bd in pregnancy.

Treatment: Aciclovir 400mg PO tds for 5 days

1st or 2nd Trimester Acquisition Suppression from 36 weeks: Aciclovir 400mg PO tds

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

- There is some evidence for increased peri-natal mortality (preterm labour, low birth weight, still birth) however the data is conflicting.
- Treatment should not be delayed and should be in line with the clinical condition. It will usually involve the use of oral (or intravenous) aciclovir, in standard doses (oral aciclovir 400mg tds until delivery).
- The obstetrician and midwife need to be informed.
- Women with suspected genital herpes who are having midwifery –led care should be referred for review by an obstetrician.
- Expert advice needs to be sought concerning the likely mode of delivery. C section should be the recommended choice of delivery for all women developing symptoms within 6 weeks of expected delivery as the risk of neonatal transmission of HSV is 41%.
- It can be difficult to distinguish between primary and recurrent HSV infections, as in up to 15% of cases where a woman presents with a first episode of clinical HS, it will actually be a recurrent infection. For women presenting with first episode of genital herpes in the third trimester, particularly within 6 weeks of the expected delivery, type specific HSV antibody testing (immunoglobulin G antibodies to HSV-1 and HSV -2) is advisable. This is not available in Scotland but on discussion with local virology services can be requested from Colindale, London. 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 and elective C Section would not be indicated to prevent neonatal transmission. 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 BASHH guidance for further information.
- The neonatologist should be involved in advance of delivery.

3rd Trimester Acquisition: Aciclovir 400mg PO tds until delivery

Recurrent Genital Herpes (initial episode predates pregnancy)

- There is no increased risk of preterm labour, premature rupture of membranes or fetal growth restriction associated with women seropositive for HSV.
- There are no congenital abnormalities associated with recurrent genital herpes infections.
- 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).
- 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 C Section.
- Daily suppressive aciclovir 400mg tds may be considered from 36 weeks as it may reduce asymptomatic shedding and HSV lesions at term.

Recurrent Genital Herpes Suppression: Aciclovir 400mg PO tds
(from 36 weeks until delivery)

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

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

Genital herpes in preterm labour

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

Management of HIV positive women with HSV infection

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

Syphilis

Syphilis in pregnancy should be managed as clinically urgent by a multidisciplinary team including GUM, Obstetrics, Paediatrics and General Practice.

Screening

- All pregnant women should have serological screening for syphilis at their initial antenatal visit. This should be repeated if the woman is at risk of infection.

- Treponema pallidum can be transmitted transplacentally at any stage of pregnancy; the risk is dependant on the stage of maternal infection and duration of fetal exposure.

- Syphilis can cause polyhydramnios, miscarriage, pre-term labour, stillbirth, hydrops and congenital syphilis.

- In 2011 in the UK, approximately one woman in 650 (0.15%) had positive antenatal screening tests.
  Of this:
  - 46% had been treated adequately for syphilis before conception.
  - 23% had false positive tests.
  - 21% were diagnosed and treated for syphilis for the first time during the current pregnancy.

- Maternal co-infection with HIV may increase the transmission risk of syphilis.

Management

- GU Physicians should make a clear diagnosis and communicate this clearly in a birth plan. See appendix for BASHH example.

  The outcome could be:
  a. Maternal treatment not indicated
     - Biological false positive test
     - Syphilis adequately treated before this pregnancy

  b. Maternal treatment indicated
     - Active syphilis of any stage
     - Unclear history of syphilis treated prior to this pregnancy

- When women have been cured of syphilis prior to pregnancy, their RPR/VDRL should be repeated at 28 weeks gestation. If re-infection is excluded, the woman requires no further treatment and the neonate will not require testing.

- Re-treatment in pregnancy is indicated where there is uncertainty of treatment or serologic cure is in doubt.

- Partner notification is essential to reduce the possibility of re-infection.

Treatment

- A single dose of benzathine penicillin G 2.4 MU is effective in most cases.Local Sandyford practice is to treat with 2 doses.

Benzathine Penicillin G 2.4 MU Intramuscular on Day 1 & 8 See syphilis guidelines for administration

- For those allergic to penicillin, de-sensitisation should be considered. Where it is necessary to use macrolides to treat the mother during pregnancy, the neonate will require assessment and treatment at birth.

- In pregnancy the rate of the Jarisch-Herxheimer reaction is the same as in the non-pregnant, circa 40%. This may cause uterine contractions and fetal heart decelerations, as a result of maternal fever.
  Therefore, there may be a theoretical increased risk of spontaneous and iatrogenic preterm delivery and fetal demise.
  Management should be supportive with antipyretics. Steroids are not effective in reducing these effects.

- If delivery occurs within 30 days after completion of therapy the neonate will require empirical treatment.

Follow Up

- It may take several months to observe a four-fold drop in RPR/VDRL titre and in many pregnancies labour will occur before these periods have elapsed. Moreover, women with late syphilis may have serofast RPR/VDRL titres. Hence, serological cure may not be demonstrable before birth of the neonate.

Trichomonias Vaginalis

- Trichomonias vaginalis (TV) has been associated with premature rupture of membranes, preterm delivery, and low birth weight.
- There is no evidence to support asymptomatic screening for TV.
- Symptomatic pregnant woman can be treated regardless of the stage of the pregnancy, although some clinicians have preferred to defer treatment until the second trimester. If symptoms do not resolve a test of cure is indicated.
- When a patient is asymptomatic some clinicians may recommend deferring therapy until after 37 weeks' gestation. Senior clinicians should counsel patients regarding the potential risks and benefits of treatment and communicate the option of therapy deferral in asymptomatic pregnant women until after 37 weeks' gestation.
- Pregnant women can be treated in the usual way; apart from avoiding high doses regimens of metronidazole .

Metronidazole 400mg bd PO 7 days

- No teratogenic or mutagenic effects in infants have been found with metronidazole.
- The safety of tinidazole in pregnant women, however, has not been well evaluated.
- Partner notification should be undertaken to prevent re-infection.

Vulvovaginal Candidiasis

- Vulvovaginal candidiasis (VVC) is common during pregnancy and doesn't require treatment unless symptomatic.
- There is no evidence of any adverse effect on pregnancy.
- Topical imidazoles (e.g. clotrimazole) have been found to be effective in pregnant women with VVC but a longer treatment regimen may be required.

Clotrimazole 500mg vaginal pessary nocte

- Oral antifungals should be avoided during pregnancy because of a lack of teratogenicity data.

Group B Streptococcal (GBS) Colonisation

- About a quarter of all pregnant woman in the UK carry GBS in their vagina.
- GBS can be passed from mother to baby. When this happens it can occasionally cause severe illness in the newborn (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 midwifery or 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:

  http://www.rcog.org.uk/files/rcog-corp/PI_GroupB_streptococcus_(GBS)_infection_in_newborn_babies.pdf

References

The West of Scotland Clinical Guidelines on Bacterial Vaginosis, External Anogenital Warts, Chlamydia, Gonorrhoea, Genital Herpes, Syphilis, Trichomonas Vaginalis available at

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Guptam N, Bowman C. Managing sexually transmitted infections in pregnant women. *Womens Health* 2012; 8(3):313-21

The Royal College of Obstetricians and Gynaecologists green top guideline Number 36 Second edition July 2012

'The Prevention of Early-onset Neonatal Group B Streptococcal Disease'
http://www.rcog.org.uk/files/rcog-corp/GTG36_GBS.pdf [accessed 2nd Jun 2015]

Appendix - (Syphilis birth plan (adapted from BASHH)

Maternal details:

Estimated date of delivery:

Maternal syphilis diagnosis, treatment details & dates:

Other concerns (e.g. Re-infection risk from partner, treatment late in pregnancy, etc):

GUM advice for infant management:

1. [] **Mother adequately treated prior to this pregnancy with no risk of congenital syphilis.**
   - **At birth:**
     Infant requires no additional physical examination or tests for syphilis
   - **Follow-up:**
     Infant needs no follow-up for syphilis.

2. [] **Mother treated for syphilis during this pregnancy with low risk of congenital syphilis.**
   - **At birth:**

     Assess infant for signs of congenital syphilis.
     If no concerns perform routine syphilis screening on infant venous (not cord) serum sample.
     Request "Syphilis screen + RPR + treponemal IgM."
   - **Follow-up:**

     Request "Syphilis screen + RPR + treponemal IgM" and repeat every 3 months until RPR is negative (this usually occurs by 6 months).
     If clinical signs suggest congenital syphilis (see 2015 BASHH guideline), manage according to 'option 3' below.

3. [] **There is a significant risk of congenital syphilis.**
   - **At birth:**

     Assess infant for signs of congenital syphilis (see 2015 BASHH guideline). Request "Syphilis screen + RPR + treponemal IgM" plus FBC, U&E, LFT, ALT. Lumbar puncture (request WBC, protein, RPR, TPPA) and further tests as clinically indicated; long bone & chest X rays, ophthalmology & audiology reviews and (if available) samples from lesions for dark ground microscopy and PCR for T. pallidum.

- **Treatment for congenital syphilis:**
  Benzylpenicillin 25 mg/kg 12hrly IV for 7 days, then 8 hrly on days 8, 9 and 10 (total of 10 days).
- **Follow-up months 1 and 3:**
  Request “Syphilis screen + RPR +treponemal IgM”
- **Follow-up months 6 and 12:**
  Request RPR only. Discharge infant when RPR titre has dropped at least fourfold (e.g from 1 in 32 to 1in 8) or becomes negative.

Please discuss all infants with suspected syphilis or requiring treatment with the GUM team on call, or any blood tests requiring interpretation.

LOCAL CONTACT DETAILS:

PLAN COMPLETED BY:

DATE:

COPIES TO: OBSTETRIC TEAM, GP, PAEDIATRIC/NEONATAL TEAM