Guideline for the Management of Chickenpox in Pregnancy

Introduction

Varicella Zoster Virus (VZV) is a DNA virus of the herpes family that is highly contagious and transmitted by respiratory droplets or by direct contact with the vesicle fluid. The primary infection is characterised by fever, malaise and a pruritic rash that develops into crops of maculopapules, which become vesicular and crust over before healing. The incubation period is between 1 and 3 weeks and the disease is infectious 48 hours before the rash appears and continues to be infectious until the vesicles crust over within 5 days.

Over 90% of individuals over 15 years of age in England and Wales are seropositive for VZV immunoglobulin G (IgG) antibody. Contact with chickenpox is common in pregnancy although primary VZV infection in pregnancy is uncommon; it is estimated to complicate 3 in every 1000 pregnancies. At booking women should be asked about past history of chickenpox or shingles. But this is not tested for routinely. Known seronegative women should avoid contact with chickenpox or shingles.

The risk are those of fetal varicella syndrome before 28 weeks and neonatal infection if delivered less than 4 weeks after infection

Assessment of women in contact with chickenpox

Women who gives history of contact with chickenpox or shingles during pregnancy

- Careful history taking to confirm the significance of the contact
- Pregnant women with uncertain or absent history should have blood test to determine VZV immunity. VZV IgG should be tested from the booking bloods.
- If the pregnant woman is not immune to VZV and has had significant exposure*, she should be offered VZIG as soon as possible. VZIG is effective when given up to 10 days after contact.
- VZIG can be ordered from the hospital pharmacy using the VZIG Pharmacy Request Form which is available on Firstport:

  Search: **VZIG** Pharmacy Request Form on FirstPort for the PDF form

Treatment of the nonimmune woman in contact with chickenpox:

- The adult dose of VZIG is 1g (4x250mg vials) by deep intramuscular injection.
- Non-immune pregnant women who have been exposed to chickenpox should be managed as potentially infectious from 8–28 days after exposure if they receive VZIG and from 8–21 days after exposure if they do not receive VZIG.
- Women who have had exposure to chickenpox or shingles should be asked to notify their doctor or midwife early if a rash develops.

- A pregnant woman who develops a chickenpox rash should be isolated from other pregnant women when she attends a general practice surgery or a hospital for assessment.
- A second dose of VZIG may be required if a further exposure is reported and 3 weeks have elapsed since the last dose
- Ibuprofen (NSAIDs) should be avoided where possible due to the potential to increase the risk of serious skin and soft tissue infections associated with varicella

Vaccination

Non immune women can be offered postpartum vaccination (two doses 4-8 weeks apart) with the advice to avoid pregnancy 4 weeks after completion of vaccination.

Significant exposure

*__Significant exposure__ – (contact with chicken pox/disseminated or localised exposed zoster)

- contact in the same room for 15 minutes or more
- face-to-face contact
- contact in the setting of a large open ward
- Contact with immunocompromised people with zoster on any part

Outpatient Treatment of women with varicella in pregnancy (See Appendix 1 page 4)

- Women who develop a chickenpox rash should immediately contact their general practitioner.
- Women should avoid contact with potentially susceptible individuals, e.g. other pregnant women and neonates, until the lesions have crusted over which is usually about 5 days after the onset of the rash.
- Symptomatic treatment and hygiene is advised to prevent secondary bacterial infection of the lesions.
- Oral aciclovir (800 mgs 5 times a day for 7 days) should be prescribed for pregnant women with chickenpox if they present within 24 hours of the onset of the rash and if they are 20 weeks of gestation or beyond. Use of aciclovir before 20 weeks should also be considered.
- Aciclovir is not licensed for use in pregnancy and the risks and benefits of its use should be discussed with the woman.
- Intravenous aciclovir should be given to all pregnant women with severe chickenpox.

Local fetal medicine referral to be arranged at 16-20 weeks or 5 weeks after infection

Inpatient treatment of the woman with varicella in pregnancy

- The pregnant woman with chickenpox should be asked to contact her doctor immediately if she develops respiratory symptoms or any other deterioration in her condition.
- Women who develop the symptoms or signs of severe chickenpox should be referred immediately to hospital.
- Ideally, women should not be managed in a maternity unit and discussion should be had with local infectious diseases or general medicine specialists
- Women hospitalised with varicella should be nursed in isolation from babies, potentially susceptible pregnant women or non-immune staff.
- The timing and mode of delivery of the pregnant woman with chickenpox must be individualised.

Criterion for admission to hospital-**

- Respiratory symptoms
- Neurological symptoms other than headache
- Haemorrhagic rash/bleeding
- Severe disease (eg. Dense rash with or without numerous mucosal lesions)
- Immunosuppression
- Persistent fever or cropping of rash continuing after 6 days

Ref **HPA (2011) *Guidance on viral rash in pregnancy. Investigation, diagnosis and management of viral rash illness, or exposure to viral rash illness, in pregnancy. Health Protection Agency.* www.hpa.org.uk

Maternal and fetal risks of varicella

Maternal

- Development of rash
- Pneumonia
- Hepatitis
- Encephalitis
- Death

Fetal/ Fetal varicella syndrome (FVS)

Risk if spontaneous miscarriage is not increased if chicken pox occurs in first trimester.

- If the pregnant woman develops varicella or shows serological conversion in the first 28 weeks of pregnancy, she has a small risk of FVS (Fetal varicella syndrome) and she should be informed of the implications.

- FVS is characterised by one or more of the following: skin scarring in a dermatomal distribution; eye defects (microphthalmia, chorioretinitis or cataracts); hypoplasia of the limbs; and neurological abnormalities (microcephaly, cortical atrophy, mental retardation or dysfunction of bowel and bladder sphincters), low birth weight, withered limbs.
- If maternal infection occurs in the last 4 weeks of a woman's pregnancy, there is a significant risk of varicella infection of the newborn. A planned delivery should normally be avoided for at least 7 days after the onset of the maternal rash if possible clinically.
- A neonatologist should be informed of the birth of all babies born to women who have developed chickenpox at any gestation during pregnancy.
- Women with chickenpox should be encouraged to breastfeed if they wish to and are well enough to do so

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Addition comments from Pharmacy (Hannah Fulton)

NHSL Varicella and Shingles Guideline:

http://firstport2/staff-support/infection-prevention-control/Lists/IPC%20Policies%20Procedures%20and%20Guidelines/Attachments/82/Guideline%20for%20the%20Management%20Chickenpox%20(Varicella)%20and%20Shingles%20(Herpes%20Zoster).pdf

NHSL Chickenpox policy and the order form state that all supplies should be discussed with Micro/ID and a name of micro/ID recorded on the supply sheet

The latest PHE statement (June 2019, link below) recommends aciclovir 800mg QDS (or Valalciclovir 1g TDS) as an alternative prophylaxis regimen to ZVIG for exposure in women >20week who are antibody negative. They state their basis for this recommendation is:

- "There is little if any available data on the efficacy of aciclovir in preventing chicken pox in pregnant women, and no data on the efficacy of preventing congenital varicella infection.

> Theoretically aciclovir should be as least as effective at preventing severe varicella infection in the mother (greatest risk in later pregnancy) as in immunosuppressed patients where efficacy has been demonstrated. Prevention of transplacental infection of the foetus following with potential exposures in the first 20 weeks of pregnancy, using antivirals is less clear, not least as the optimal timing and duration of treatment are unknown."

Treatment of women with varicella section:

- Acicloivr:
    - Intravenous aciclovir is mentioned in outpatient section but not the inpatient section
    - There is no dosing advice for IV aciclovir. As RCOG does not state a dose, is there a consensus as to what dose should be used in pregnancy? PHE suggests BNF adult immunocompromised dose 10mg/kg and Canadian guideline is slightly higher at 10-15mg/kg tds (body weight). Are these cases dealt with in maternity or should dosing guided by another specialty e.g. Micro/ID?

Regarding vaccination, RCOG suggest confirmed negative women could have the vaccine however currently the only indications for varicella vaccination through NHS are (as per current Green Book Ch 34):

- Non-immune healthcare workers
- Laboratory staff (virology + ID labs)
- Contacts of immunocompromised patients (where close contact is unavoidable)

Unless the patient falls under 1 or more these criteria, vaccination cost wouldn't be covered by NHS. In this case I don't think GPs will able to offer it unless it's done as a private Rx? In which case Cost could be prohibitive to some patients. Unless an unvaccinated new-born could be classed as immunocompromised?

Patients can pay for the vaccination through some specialist community pharmacies however cost again would be prohibitive to some patients (around £140 for full course).

PHE June 2019 Varicella statement: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/812526/PHE_PEP_VZIG_guidance_for_health_professionals.pdf

Appendix 1: Management Algorithm for women with a history of contact with varicella