Plymouth Hospitals NHS
NHS Trust

Antenatal Guidelines

No.10 Varicella Zoster Virus

- 90% of women attending antenatal clinics are immune to VZV
- The chickenpox rash is sufficiently distinctive to make a diagnosis without laboratory investigations
- If a patient gives a past history of chickenpox no further investigation of their immune status is required. If there is any doubt then the presence of anti-VZV should be sought from booked or fresh blood. Discuss with on call Microbiology on 52387
- Many reported exposures are not likely to lead to infection, a detailed exposure history should be sought
- VZ antibody negative patients are currently given varicella zoster immunoglobulin (VZIG) to attenuate any subsequent chickenpox. This may, in the first half of pregnancy, reduce the incidence of foetal syndrome.
- There is no evidence of benefit when VZIG is administered >10 days after contact.
- Varicella in pregnancy tends to be a more severe disease with greater risk of pneumonitis. These risks are compounded by the presence of other known risk factors such as lung disease, smoking and steroid use

1. Management of pregnant women exposed to chickenpox

Is the contact significant?
The risk of acquiring infection from an immunocompetent individual with non-exposed zoster lesions eg. truncal is remote. VZIG should be restricted to contact with:

- Chickenpox (varicella)
- Disseminated zoster
- Immunocompetent individuals with exposed lesions (e.g. ophthalmic zoster)
- Immunosuppressed patients with localised zoster on any part of the body (in whom viral shedding may be greater).

Closeness and duration of contact: the following should be used as a guide to the significance of exposure

- Contact in the same room (e.g. in a house or classroom or a two- to four-bed hospital bay) for a significant period of time (15 minutes or more).
- Face-to-face contact, e.g. while having a conversation
- In the case of large open wards, airborne transmission at a distance has occasionally been reported and giving VZIG to all susceptible high-risk contacts should be considered.

Is the lady susceptible?
If no history of previous chickenpox or shingles and significant contact (see above), test immediately for VZV IgG from fresh or booked blood. Discuss with on call Microbiology on 52387. If immunoglobulin is to be effective it must be delivered within 10 days from contact.

Timing of the exposure in relation to onset of rash in the index case
An individual with chickenpox or disseminated zoster is usually considered infectious from 48 hours before onset of rash until crusting of lesions. For zoster, infectivity is from the day of onset of rash until crusting

If susceptible with a significant infectious contact and present within 10 days give one dose of VZIG immunoglobulin. This is an IM injection (see product insert or Green Book (see references) for further detail)

VZIG dose (IM only)

Age Range	Dose	Dose Volume
11-14 years	750mg	3 vials
>15 years	1,000mg	4 vials

Contact Pharmacy on ext XXXXXXX or the on call Pharmacist (out of hours) to access VZIG

Subsequent infectivity

All susceptible women exposed to varicella should consider themselves potentially infectious for 8 to 21 days post exposure or longer if clinical chickenpox develops.

If VZIG is used the period is 8-28 days post exposure or longer if clinical chickenpox develops.

During this period they should absence themselves from contact with other susceptible individuals and all immunosuppressed patients regardless of history of prior infection.

Repeated exposure to VZV

Repeat dosing of VZIG within three weeks is not likely to improve protection in the event of multiple sequential exposures. If further exposure is identified >3 weeks after VZIG treatment in a pregnant women who has not developed varicella in the interval, retest for IgG as subclinical infection and seroconversion is not uncommon. If the lady remains susceptible redose with VZIG

2. Management of VZV infection in pregnancy

Most cases are uncomplicated, but if pneumonia occurs it is more severe than in the non-pregnant adult with appreciable mortality. Smokers are at higher risk.

- **When should acyclovir treatment be considered**

Presentation within 24 hours of chickenpox rash onset. Severity of disease is increased in all adults so offer acyclovir treatment to those with gestation >20 weeks. If gestation is <20 weeks consider the use of acyclovir. Acyclovir lacks a license for use in pregnancy so the risks and benefits of acyclovir use should be discussed.

Those who develop any of the following symptoms should be referred immediately to a hospital for observation and treatment
Chest symptoms, neurological symptoms, haemorrhagic rash or bleeding, a dense rash with or without mucosal lesions; women with significant immunosuppression should also be referred.

Consider hospital assessment even in the absence of complications
In smokers, those with chronic lung disease, taking corticosteroids or in the latter half of pregnancy.

- **Place of admission**

If a pregnant women with chickenpox needs admission she should be nursed in negative pressure isolation. This may not be possible if there are pregnancy related safety issues. A careful risk assessment needs to be made regarding site of isolation. In all cases only staff who are known to be immune to varicella infection should be involved in care. In all cases contact the Infection Control Team.

- **Referral to foetal medicine**

All women who develop chickenpox within the first 28 weeks of pregnancy should be referred for assessment by a specialist in Foetomaternal Medicine.

3.Management of VZV infection late in pregnancy and in the puerperium

If maternal chickenpox develops < one week before to one week after delivery there is a risk of neonatal disseminated infection. VZIG should be given to the child as soon as the exposure is identified and IV acyclovir used if the neonate develops a clinically apparent infection (see Neonatal Intensive Care Guideline *Varicella Zoster exposure in Neonates*)

In general, delay planned pregnancy for at least one week after maternal rash onset to allow passive immunoglobulin transfer to the baby.

In the event of any significant exposure to VZV note that any child born at less than 32 weeks, <1000g or who has had repeated blood sampling and/or transfusions to a mother with a past history of chickenpox or shingles should not be assumed to have acquired and retained adequate maternal passive immunity. Such children should have their own VZV IgG levels tested.

4. Herpes Zoster

If the mother develops shingles in pregnancy then maternal viraemia is rare and the baby will not acquire infection. However VZIG may be required by certain exposed susceptible neonates eg gestation<32/40, birth weight <1,000g, repeated blood sampling and/or transfusions and neonatal VZV IgG should be tested if such children have a significant exposure

Maternal shingles is usually clinically unambiguous, serological testing is rarely useful. If the diagnosis is in doubt, submit a viral swab for VZV PCR to the laboratory.

Maternal shingles is usually self-limiting and complications such as neuralgia are rare. Treatment with acyclovir is usually not indicated unless started within 72 hours of rash onset and any of the following:

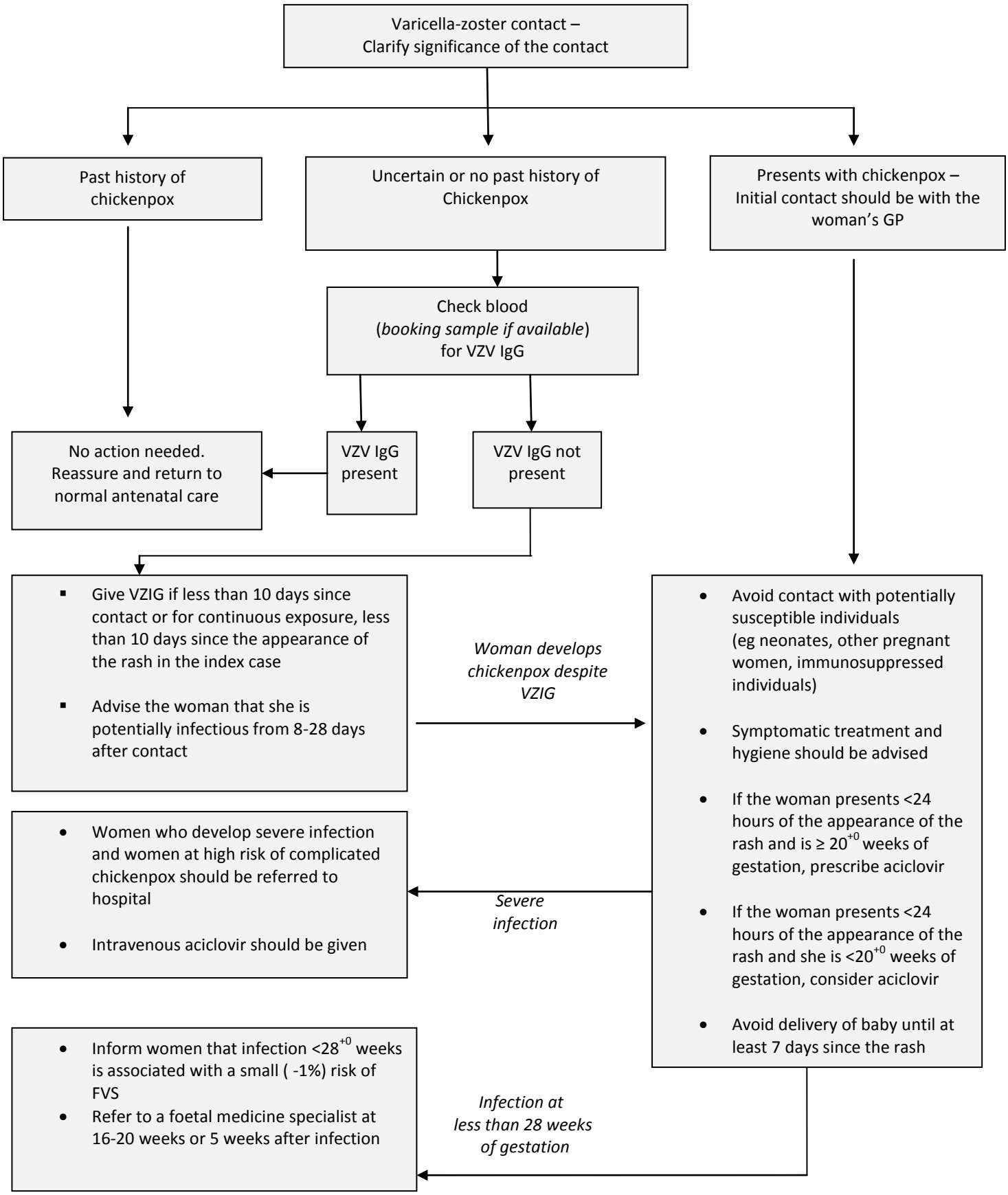
- Moderate or severe pain
- Moderate or severe rash
- Nontruncal involvement.

New cropping rash and neurological complications after >72 hours should warrant in-patient assessment and consideration of acyclovir treatment.

5. Record keeping

It is expected that every episode of care be recorded clearly, in chronological order and as contemporaneously as possible by all healthcare professionals as per Hospital Trust Policy. This is in keeping with standards set by professional colleges, i.e. NMC and RCOG.
All entries must have the **date and time** together with **signature and printed name.**

Management of varicella-zoster contact in pregnancy (adapted from RCOG Green Top guideline)



Abbreviations: FVS fetal varicella syndrome; GP general practitioner; IgG immunoglobulin G; VZIG varicella-zoster immunoglobulin; VZV varicella-zoster virus

Monitoring and Audit

Auditable Standards:
Please refer to audit tool, location: 'Maternity on cl2-file11', Guidelines

Reports to:
Clinical Effectiveness Committee – responsible for action plan and implementation of recommendations from audit

Clinical Governance & Risk Management Committee

Frequency of audit:
Annual

Responsible person:
SHO

Cross references

Antenatal Guideline 31 - Maternity Hand Held Notes, Hospital Records and Record Keeping
Antenatal Guideline 44 – Guideline Development within the Maternity Services

References

Royal College of Obstetricians and Gynaecologists Green Top 31 Chickenpox in Pregnancy (accessed 20th August 2015)
Immunisation against Infectious diseases (Green Book) chapter (accessed 20th August 2015)
Clin Infect Dis 2007: 44 (Suppl 1) S1-S26.

Author	Guideline Committee, Dr Jim Greig		
Work Address	Maternity Unit, Derriford Hospital, Plymouth, Devon, PL6 8DH		
Version	5		
Changes	Timely review		
Date Ratified	Nov 15	**Valid Until Date**	Nov 18