Plymouth Hospitals NHS
NHS Trust

CDS Guidelines

No. 6 Herpes Guideline – combined Obstetric and Neonatal

Introduction

1. Genital Herpes Simplex Infection Aetiology and Transmission

Neonatal herpes is a severe systemic viral infection with high morbidity and mortality, which is commonly acquired at or near the time of delivery. It is rare in the UK, the incidence is 1.65 per 100 000 live births.

It may be caused by herpes simplex virus type 1 or 2 (HSV-1 or HSV-2) as either viral type can cause genital herpes in the mother.

- 50% of neonatal herpes is due to HSV-1 and 50% due to HSV-2.
- 75% of neonatal herpes infections occur as a result of direct contact with infected maternal secretions.
- 25% of cases of postnatal transmission have been linked to other sources such as close relatives.

The risk of transmission is greatest when a woman acquires a **new infection (primary genital herpes)** within the last 6 weeks of pregnancy, so that the baby is delivered before the development of protective maternal antibodies and viral shedding may persist (see flow chart, appendix 1).

First episode genital herpes refers to a patient first noticing a herpetic ulcer. In these cases it is important to assume that this is primary genital herpes so that the woman receives the appropriate treatment and agrees an appropriate plan for delivery if it is indeed primary genital herpes. However, in up to 15% of cases where a woman presents with a 'first episode' of clinical HSV infection (ulceration), it will actually be a recurrent infection demonstrated by the presence of the same type-specific IgG antibody in the patient's serum.[1] **Recurrent genital herpes is associated with a very low risk of neonatal herpes.**

It is rare for transplacental intrauterine infection to occur and cause congenital herpes (skin, eye and CNS defects, FGR and fetal death). Disseminated herpes is more common in preterm infants.

2. Management of women presenting with a first episode of genital herpes during pregnancy (primary herpes)

(see appendix 1)

- For women who present with first episode genital ulceration a **referral to the GUM clinic** should be made. At the same time the woman should also be referred for **Consultant-led care** and ideally be reviewed and counselled about treatment and delivery options after having been to the GUM clinic.
- For women presenting with first episode genital ulceration in the third trimester, particularly within 6 weeks of expected delivery, a gold top blood test should be sent to Combined Labs for type-specific HSV IgG antibody test, as well as viral swabs of the genital ulcer (see below for plan for delivery based on test results).
- Acyclovir has been used extensively in pregnancy, is well tolerated and there is no evidence of maternal or fetal toxicity.[2-5]
- **Daily suppressive acyclovir can be given orally 400mg three times per day for 5 days** to treat the initial infection and should be given from 36 weeks until delivery as this may prevent recurrence of active lesions and decreases asymptomatic viral shedding.[6] Intravenous acyclovir should be used if the woman has signs of disseminated HSV infection. Paracetamol and topical lidocaine 2% gel can also be prescribed for symptomatic relief neither of which are harmful in pregnancy at standard doses.
- ***Caesarean section*** *is recommended for all women presenting with first-episode genital herpes lesions in the* ***third trimester*** *particularly those developing symptoms within six weeks of expected delivery as the risk of transmission is very high at 41%.*[3, 7-9]
- Caesarean section is *not indicated* for women who develop first lesions during first or second trimester or in women who present with a first episode of genital ulceration but whose serology shows presence of HSV antibodies of the *same* type (HSV-1 or HSV-2) as isolated on the lesional swabs. It should be noted, however, that it may take 2-3 weeks for microbiology and serology tests to be available and an initial plan for delivery should be based on the assumption that all first episodes of genital ulceration are primary HSV infection.[10]
- Women who have first-episodes genital herpes in the third trimester and who opt for vaginal birth should be given intrapartum IV acyclovir and subsequently the neonate should also receive IV acyclovir.
- Invasive procedures such as fetal scalp electrode monitoring, fetal blood sampling and instrumental deliveries should be avoided.

2.1. Management of women presenting with a recurrent episode of genital herpes

- A recurrent episode of genital herpes occurring at any time during pregnancy and labour is *not* an indication for delivery by Caesarean section.

2.2 Management of women presenting with primary genital herpes infection and PPROM (preterm pre-labour rupture of membranes)

- When a woman presents with primary genital herpes and PPROM there should be an MDT discussion involving Consultant Obstetricians, Neonatologists and Genitourinary Medicine physicians and the management will depend on the gestation that PPROM occurred.
- If immediate delivery is indicated then the anticipated benefits of Caesarean section remain.

- If immediate delivery is not indicated then the mother should be recommended to receive intravenous acyclovir 5mg/kg every 8 hours as conservative management.[10]
- In all cases the use of prophylactic corticosteroids should be considered to reduce the implications of preterm delivery on the infant.[11]
- If delivering within 6 weeks of the primary infection despite initial conservative management, delivery by Caesarean section may still offer some benefit even in the context of PPROM.[12-13]

2.3 Management of HIV-positive women with primary HSV infection

- HIV-positive women with primary HSV infection in the last trimester of pregnancy can be managed in the same way as all other women in accordance with the recommendations above for primary genital HSV infection.

2.4 Management of HIV-positive women with recurrent HSV infection

- There is evidence that ulceration due to genital herpes increases the risk of transmission of HIV to the fetus.[14, 15]
- All HIV positive women with a history of genital herpes ulceration should be recommended to receive oral acyclovir 400mg three times daily from 32 weeks gestation to reduce the chance of developing genital ulcers which pose an increased risk of transmission of HIV.[10] This treatment with oral acyclovir is especially important in women who are planning to deliver vaginally.
- Mode of delivery for women with recurrent HSV infection should be in line with the BHIVA (British HIV Association) HIV in Pregnancy guideline recommendations.[16, 17]
- There is currently no evidence to recommend the use of oral acyclovir for HIV positive women who are also HSV-1 or HSV-2 seropositive but who have no history of genital ulceration.[18]

3. Prevention of postnatal HSV transmission to the neonate

HCW (Healthcare Workers) and family members with hand lesions (herpetic whitlow) or extensive oro-facial herpes should be excluded from all direct patient contact until the lesions are fully crusted.
HCWs and family members with oral HSV reactivation should also be excluded from direct care for patients with the following conditions:

- Women during delivery
- Neonates requiring special care or intensive care
- Immunosuppressed patients (e.g. oncology, patients requiring intensive care, post-organ transplant, HIV/AIDS)
- Patients with dermatologic conditions (e.g. dermatitis)
- Burns patients
- Patients having ophthalmic procedures.

4. Recognition and Management of Neonatal HSV

Neonatal HSV has 3 clinical patterns that can overlap with each other:

1. **SEM** – localized infection to skin, eye or mouth,

2. **CNS** – localized infection to the CNS which has risk of significant neurological morbidity,
3. **Disseminated** – multi-organ involvement, very poor prognosis, attributed to delays between onset and treatment and almost exclusively seen when the mother has a primary HSV infection.

If you suspect an infant of showing symptoms of HSV infection regardless of maternal risk factors you should commence antivirals (IV acyclovir 20mg/kg 8 hourly) and take swabs (skin, conjunctiva, oropharynx, rectum for HSV PCR). If there are any CNS signs then lumbar puncture is indicated for CSF HSV PCR.

4.1 Neonates at high risk of vertical transmission

The risk of vertical transmission is up to 41% in a vaginal delivery in mothers with a primary HSV infection in the 6 weeks preceding delivery (i.e. before sero-conversion has taken place). This risk is almost completely avoided if the woman has a caesarean section delivery, and the obstetric team should offer this.

If an infant is at high risk of vertical transmission as outlined above:

- swab skin, conjunctiva, oropharynx, rectum for HSV PCR
    - the viral swab used in this trust is the UTM swab (red-top tube with pink liquid inside)
- start treatment of IV acyclovir (20mg/kg every 8 hours) until active infection ruled out
- strict infection control for mother and baby
- very low threshold for lumbar puncture for HSV PCR (i.e. clinically unwell – raised temperature, tachycardic, increased work of breathing – and/or skin lesions including in the absence of CNS symptoms)

4.2 Neonates at low risk of vertical transmission

- Mothers with recurrent HSV infection, whether they have active lesions or not.
- Caesarean section deliveries in mothers with primary HSV within the 6 weeks preceding delivery.
- **In the cases of low risk deliveries, the infant needs routine postnatal care, discharge home at 24 hours if no concerns and advise parents regarding later management if any concerns.**

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.**

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

CDS Guideline 46: Sepsis in obstetric patients

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

References

1. Hensleigh PA et al. Genital Herpes during pregnancy: inability to distinguish primary and recurrent infections clinically. *Obstet Gynecol* 1997; 89:891-5
Hotchkiss RS, Karl IE. The pathophysiology and treatment of sepsis. NEJM 2003;348(2):138-50

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3. Brown ZA et al. The acquisition of herpes simplex infection during pregnancy. *N Engl J Med*, 1997; 337:509-15.

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5. Brown Z. Preventing herpes simplex virus transmission to the neonate. *Herpes* 2004; 11 Suppl 3: 175A-186A.

6. Tookey, P and Peckham, C. Neonatal Herpes simplex virus infection in the British Isles. *Paediatr Perinat Epidemiol* 1996; 10:432-42.

7. Brown, Z et al. Effects on infants of a first episode of genital herpes during pregnancy. *N Engl J Med*. 1987;317:1246-51.

8. Prober, C et al. Low risk of herpes simplex virus infections in neonates exposed to the virus at the time of vaginal delivery to mothers with recurrent genital herpes simplex virus infections. *N Engl J Med*. 1987; 316:240-4.

9. Brown, Z et al. Neonatal herpes simplex virus infection in relation to asymptomatic maternal infection at the same time of labour. *N Engl J Med*. 1991; 324:1247-52.

10. Foley, E et al. Joint RCOG and BASHH Guideline: Management of Genital Herpes in Pregnancy. October 2014. *BASHH CEG and RCOG*.

11. Kimberlin, D et al. Committee on Infectious Diseases; Committee onFetus and Newborn. Guidance on management of asymptomatic neonates born to women with active genital herpes lesions. Paediatrics 2013; 131:e635-46.

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15. Drake, A et al. Herpes simplex virus type 2 and risk of intrapartum human immunodeficiency virus transmission. *Obstet Gynecol* 2007; 109:403-9.

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Refereences from previous guideline document

Fernández-Pérez et al. Sepsis during pregnancy. Crit Care Med. 2005;33(10 Suppl):S286-93

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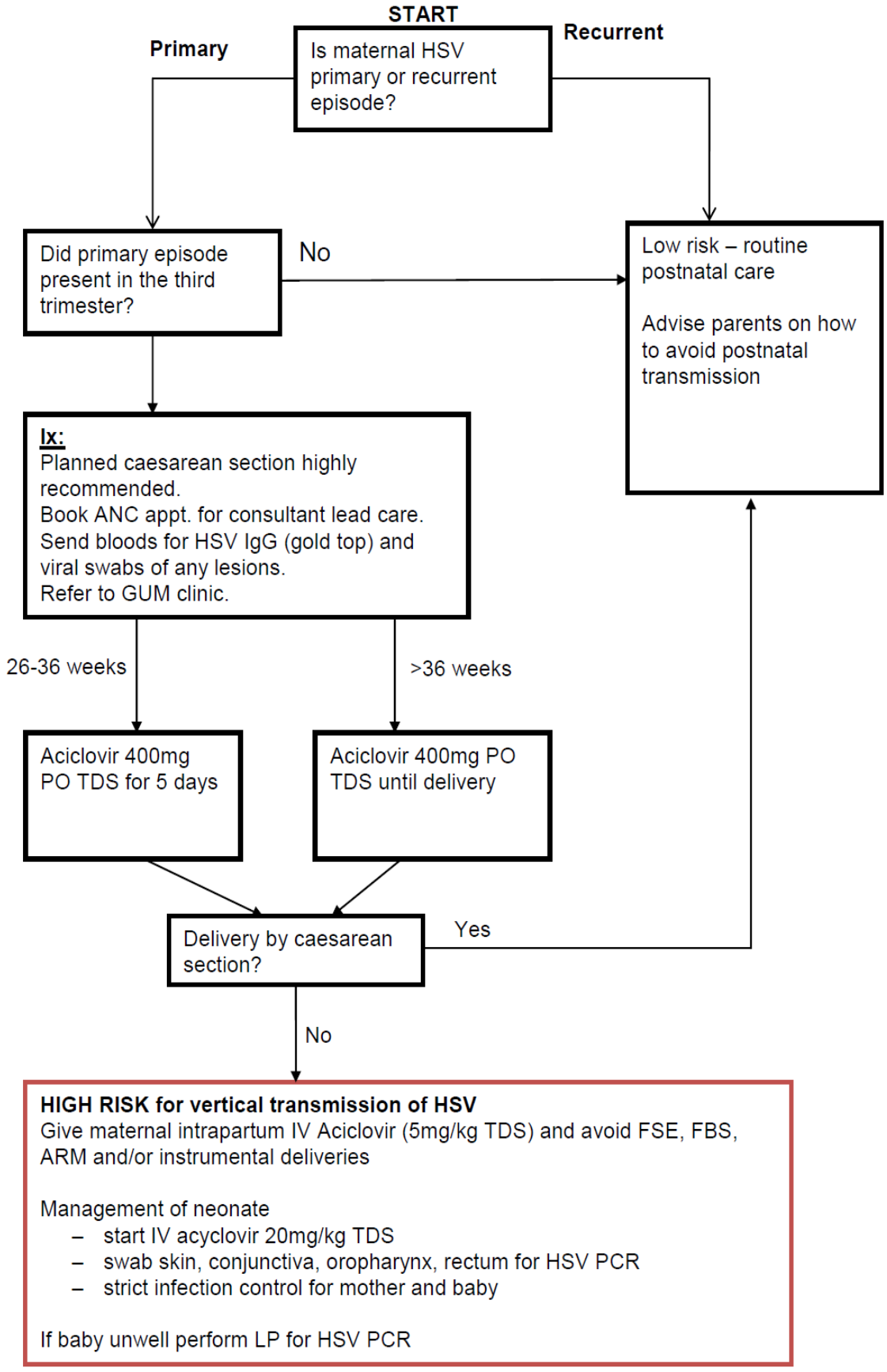
Appendix 1.


START
Is maternal HSV primary or recurrent episode?
Primary
Recurrent
Did primary episode present in the third trimester?
No
Low risk – routine postnatal care
Advise parents on how to avoid postnatal transmission
Ix:
Planned caesarean section highly recommended.
Book ANC appt. for consultant lead care.
Send bloods for HSV IgG (gold top) and viral swabs of any lesions.
Refer to GUM clinic.
26-36 weeks
>36 weeks
Aciclovir 400mg PO TDS for 5 days
Aciclovir 400mg PO TDS until delivery
Delivery by caesarean section?
Yes
No
HIGH RISK for vertical transmission of HSV
Give maternal intrapartum IV Aciclovir (5mg/kg TDS) and avoid FSE, FBS, ARM and/or instrumental deliveries
Management of neonate
– start IV acyclovir 20mg/kg TDS
– swab skin, conjunctiva, oropharynx, rectum for HSV PCR
– strict infection control for mother and baby
If baby unwell perform LP for HSV PCR

References

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