New Zealand Paediatric Surveillance Unit

PROTOCOL SHEET - NEONATAL HERPES SIMPLEX VIRUS (HSV) INFECTION

Background to study

Neonatal herpes simplex virus (HSV) infection is a rare, but important condition. Babies most commonly present with disease *localised* to the skin, eye and/or mouth. Without antiviral therapy, 70% of these babies will develop *disseminated* HSV infection, affecting the liver, lungs, gastrointestinal tract and CNS, and causing shock, DIC and bleeding with death or handicap almost inevitable. Some babies will present at about 10-14 days old with *encephalitis*, without prior signs. Early diagnosis is vital, especially now that specific antiviral therapy with adenosine arabinoside (vidarabvine, ara-A) or acyclovir is available.

Neonatal infection can follow primary or recurrent maternal infection, or can be acquired post-natally nosocomially. The latter is thought to account for about 10% of cases, while the relative contribution of primary and reactivation maternal HSV varies. In general maternal IgG antibody to HSV is protective, so primary maternal HSV infection, although rare has a high incidence (about 30%) of neonatal disease. In contrast, reactivation of maternal disease rarely results in neonatal disease (less than 3%). In the USA, 85-90% of neonatal HSV infection is due to HSV-2, and the rest to HSV-1.

Objectives:

1. To determine the incidence of neonatal HSV infection in New Zealand, its mortality and morbidity
2. To determine its mode of presentation eg localised, disseminated or complicated by encephalitis or pneumonitis and mode of transmission.
3. To determine whether there is delay between presentation, diagnosis and commencement of treatment

CASE DEFINITION and REPORTING INSTRUCTIONS

Please report any neonate seen in the last month with :
age less than or equal to 28 days (regardless of gestation) and clinical evidence of HSV infection* and either:

- ***HSV isolated from the baby or***
- ***HSV detected in CSF by PCR in association with CSF pleocytosis or other evidence of HSV encephalitis or***
- ***specific HSV-IgM detected in baby's serum or***
- ***mother seroconverted or IgM positive and baby has typical clinical manifestations or***
- ***HSV isolated from mother around delivery and baby has typical clinical manifestations.***

** Clinical manifestations may be localised (herpetic lesions of the skin, eye or mouth) or disseminated including encephalitis, pneumonitis, or hepatitis (manifest by coagulopathy, jaundice, hepatosplenomegaly)*

Follow up of notifications
Clinicians notifying a case of neonatal Herpes simplex virus infection will be requested to complete a reply-paid questionnaire.

Recommended investigation of suspected neonatal HSV infection
For your information the current protocol recommended for the investigation of suspected neonatal HSV infection is as follows:

Immediate specimens :

Baby :
1. Swabs from nose & throat: after swabbing, make a spot on a slide and air dry, then place the swab in viral transport medium (VTM) **OR** NPA specimen (sent on ice to laboratory for immediate processing)
2. Vesicle fluid (place a spot on slide and air dry, place remainder on swab in VTM)
3. Serum for HSV (1 and 2) IgM
4. CSF for HSV culture, PCR and IgM
5. Any tissue

Mother : Serum for HSV (1 and 2), IgM and IgG

Two weeks
1. Serum from mother and baby for convalescent serology (IgG and IgM)
2. CSF from baby for serology.

Six weeks Serum from mother and baby.

Clinicians are invited to contact Dr Dawn Elder (ph: 04 385 5999 ext 6145) to discuss any issues relating to this study.

Investigator

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References

- Whitley RJ. *Neonatal Herpes Simplex Virus Infections.* J Med Virol 1993; Supp 1:13-21.
- Elder DE, Minutillo C, Pemberton PJ. *Neonatal Herpes Simplex Infection: Keys to Early Diagnosis.* J Paed Child Health 1995 ; 31 : 307-11.