Herpes Simplex Virus (HSV) Disease In Infants Younger Then 90 Days Of Age: Ensuring Safety and Hygiene

Dr. Mandayam Rangayyan Roopashree

Coordinator: Quality and Patient safety, NHS, Wales, UK

ABSTRACT

Herpes Simplex Virus (HSV) is a common viral infection in adults, often manifesting as cold sores or genital ulcers. However, when transmitted to infants under 90 days of age, HSV can lead to a rare but potentially devastating condition known as neonatal HSV disease. This infection can result in severe illness, long-term neurological damage, or even death, particularly in premature infants.

Rising Concern in the UK: Recent surveillance by the British Paediatric Surveillance Unit (BPSU) revealed a concerning rise in neonatal HSV cases. Between 2019 and 2022, the UK and Ireland reported an incidence of 6.9 cases per 100,000 live births, nearly double the rate observed in earlier studies1.

The disease presents in three main forms:

- Disseminated disease (33%) – affecting multiple organs, often mimicking bacterial sepsis.
- Central Nervous System (CNS) disease (35%) – leading to encephalitis and seizures.
- Skin, Eye, and Mouth (SEM) disease (32%) – typically less severe but still requiring prompt treatment.

Mortality rates vary significantly by disease type, with 66% of disseminated cases resulting in death, compared to 7% for CNS infections1.

Transmission and Risk Factors: Most neonatal HSV infections are acquired during birth through contact with infected vaginal secretions. A smaller proportion results from postnatal exposure to cold sores or herpetic whitlow from caregivers or healthcare workers2.

Key risk factors include:

- Primary maternal infection in late pregnancy
- Prolonged rupture of membranes
- Use of invasive delivery tools
- Premature birth, which reduces transplacental antibody transfer

Signs and Symptoms:

To Watch For Early symptoms are often non-specific, making diagnosis challenging.

Common indicators include:

- Poor feeding, lethargy, irritability
- Skin vesicles or ulcers (may be absent)
- Fever or temperature instability
- Respiratory distress or apnea
- Seizures or abnormal movements
- Unexplained bleeding or jaundice
- Floppiness or reduced responsiveness2
- Prevention Strategies

Importance of Early Identification:

- Due to the non-specific early symptoms of neonatal HSV and its potentially devastating outcomes (high morbidity and mortality), healthcare providers need a high index of suspicion.
- Prompt testing and early treatment improve survival and reduce long-term neurological damage.

CONTACT

Dr. Mandyam Rangayyan Roopashree
NHS, UK, Wales
mrroopashreedr@gmail.com
+44 7435384850

INTRODUCTION

Herpes Simplex Virus (HSV) is a common viral infection in adults, often manifesting as cold sore or genital ulcers. However, when transmitted to infants under 90 days of age, HSV can lead to a rare but potentially devastating condition known as neonatal HSV disease. This infection can result in severe illness, long-term neurological damage, or even death, particularly in premature infants.

What is HSV? Herpes simplex (HSV) is a virus. It causes different types of infections and illnesses.

It is a very common infection in adults often causing only cold sores.

Neonatal HSV disease is when the virus makes a baby sick in their first few days or weeks of life.

Babies can be affected if their mother has the infection during her pregnancy or at the time the baby is born, or if an individual with the infection comes into very close contact with the baby in the baby's first weeks of life.

Why is this important? Neonatal HSV disease is a rare but devastating disease. Many of the babies affected will die or will suffer from long-term neurological problems. We are trying to reduce the number of babies who become sick from this disease by identifying those who are at greatest risk and taking steps to prevent them from becoming infected. At the moment we do not have enough information about the number of cases of this disease, which babies are most at risk, ways we might be able to reduce those risks, and whether the treatment and prophylaxis we are using is reducing long-term problems and later relapses.

What is the aim of this? We aim to establish the current number of cases of HSV disease occurring in babies younger than three months of age, in the UK. We aim to raise awareness as information about those cases from pregnancy through to admission to hospital, outcome and follow-up at 12 months of age, including relapse rate and neurodevelopmental outcome at one year if they survive. This awareness about HSV infections will help us to improve our understanding of the current burden of infection and its risk factors.

This will help target future strategies to prevent infections.

Preventing neonatal HSV begins with maternal awareness and antenatal care: Antiviral prophylaxis from 32 weeks gestation is recommended for women with recurrent genital herpes.

Cesarean delivery is advised if primary genital herpes occurs near term.

Postnatal precautions include strict hand hygiene and avoiding contact between infants and individuals with active HSV lesions.

Healthcare workers with active cold sores or whitlow should undergo risk assessment before interacting with newborns2.

Treatment and Management: Prompt initiation of intravenous acyclovir is critical. Treatment duration depends on disease severity:

- 10 days for asymptomatic infants with negative tests
- 14 days for SEM disease
- 21 days for CNS or disseminated disease

Follow-up includes PCR testing to confirm viral clearance and oral acyclovir prophylaxis for six months post-treatment in high-risk cases2.

METHODS AND MATERIALS

Protect your family from cold sores:

1. Avoid Kissing and Lip Contact During Outbreaks:

- During an outbreak, it's crucial to avoid kissing or any other lip contact with family members.
- This helps prevent the virus from spreading to others.
- Refrain from sharing utensils, drinking glasses, lip balm, or any items that come into contact with your mouth.

2. Maintain Good Hygiene:

- Wash your hands frequently, especially after touching your face or applying medication to a cold sore.
- Use tissues or cotton swabs to apply topical treatments, and dispose of them immediately after use.

3. Communicate Openly:

- Let your family members know when you have an outbreak so they can take necessary precautions.
- Educate your children about the importance of not touching or picking at cold sores.

4. Safe Affection:

- When you're not experiencing an outbreak, it's important not to hold back from showing affection.
- Hugging, touching, and other non-lip contact forms of affection are safe and crucial for maintaining emotional bonds with your loved ones.

5. Postnatal care: Strict hand hygiene and limiting contact with individuals with active herpes lesions (including avoiding kissing near the baby's face) helps reduce transmission.By following these steps,

- We can minimize the risk of spreading cold sores to your family members while continuing to show love and affection.

RESULTS

Rising Concern in the UK

- Recent surveillance by the British Paediatric Surveillance Unit (BPSU) revealed a concerning rise in neonatal HSV cases.
- Between 2019 and 2022, the UK and Ireland reported an incidence of 6.9 cases per 100,000 live births, nearly double the rate observed in earlier studies1.

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- Mortality rates vary significantly by disease type, with 66% of disseminated cases resulting in death, compared to 7% for CNS infections1.

Transmission and Risk Factors:

- Most neonatal HSV infections are acquired during birth through contact with infected vaginal secretions.
- A smaller proportion results from postnatal exposure to cold sores/herpetic whitlow from caregivers or healthcare workers2.

Key risk factors include:

- Primary maternal infection in late pregnancy
- Prolonged rupture of membranes
- Use of invasive delivery tools
- Premature birth, which reduces transplacental antibody transfer

Prevention:

- Pregnant women should inform healthcare providers if they have a history of genital herpes, especially if newly acquired late in pregnancy.
- Antiviral prophylaxis from 32 weeks gestation is advised for women with recurrent genital herpes.
- Cesarean section is recommended if primary genital herpes occurs near delivery to reduce transmission risk.

Postnatally, strict hand hygiene and limiting contact with individuals with active herpes lesions (including avoiding kissing near the baby's face) helps reduce transmission.

- Breastfeeding may continue unless there are active herpetic lesions on the breast.

Importance of Early Identification:

- Due to the non-specific early symptoms of neonatal HSV and its potentially devastating outcomes (high morbidity and mortality),
- healthcare providers need a high index of suspicion.
- Prompt testing and early treatment improve survival and reduce long-term neurological damage.





DISCUSSION

Living Safely with HSV in the Household For families managing HSV, maintaining hygiene and communication is key:

- Use separate towels and personal items during episodes.
- Wash hands thoroughly after touching affected areas.
- Educate family members about safe practices and the nature of HSV.
- Importantly, HSV does not spread through casual contact or shared spaces.
- With proper precautions, families can continue to show affection and maintain emotional bonds safely2.

Key Prevention Tips for Neonatal Herpes Simplex Virus (HSV):

Protecting infants under 90 days from HSV requires vigilance during pregnancy, delivery, and postnatal care

During Pregnancy:

- Disclose HSV history to healthcare providers
- Early disclosure allows clinicians to assess risk and plan appropriate care to reduce transmission.
- Start antiviral prophylaxis from 32 weeks gestation
- Women with recurrent genital herpes benefit from antiviral medication to suppress viral shedding before delivery.
- Opt for caesarean delivery if primary genital herpes occurs near term
- Caesarean section reduces the baby's exposure to active lesions during birth, lowering transmission risk.

At Birth:

- Avoid invasive procedures during delivery if HSV is suspected
- Tools like forceps or foetal scalp electrodes can increase the risk of HSV transmission if lesions are present.
- Monitor new-borns closely if maternal HSV infection is present
- Early signs of infection may be subtle; close observation ensures timely intervention.

Postnatal Care:

- Practice strict hand hygiene before handling the baby
- HSV can be transmitted through contact with contaminated hands, especially if cold sores are present.
- Avoid contact with active lesions
- Individuals with cold sores or herpetic whitlow should not kiss or touch the baby's face or hands.

Conclusion:

Embrace Family Life with Confidence:

- Neonatal HSV is a serious but preventable condition. Increased awareness, early diagnosis, and timely treatment are essential to improving outcomes.
- Ongoing surveillance and education will help reduce transmission and support affected families.
- Living with herpes doesn't mean you have to distance yourself from your loved ones.
- By taking appropriate precautions during outbreaks and maintaining good hygiene, you can protect your family from both oral and genital herpes.
- Remember, showing affection and maintaining strong emotional bonds are crucial for family well-being.
- With the right knowledge and practices, you can live confidently and keep your family safe.



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