

## Neonatal herpes simplex virus infection: A devastating newborn pathogen

A 27-week premature infant born, by cesarian section, to a 25-year-old mother who acquired a primary genital herpes simplex virus (HSV)-2 infection during the first trimester of pregnancy was diagnosed with neonatal HSV-2 encephalitis and died at three days of age. This outcome is in line with the finding of a multicentre study of neonatal HSV infection that 46% of infected newborns were born prematurely. The most serious direct consequence of genital HSV infections is neonatal herpes infection. More than 70% of infants with neonatal HSV infections are born to mothers who had no signs or symptoms of HSV lesions at delivery. In infants born to a mother who acquired primary HSV infection near the time of labour, the risk of neonatal HSV infection is almost 50%, whereas the risk of perinatal transmission decreases to less than 5% among women with recurring infection.

Clinical signs of neonatal HSV encephalitis may be subtle or nonspecific, such as lethargy, hypotonia, irritability, poor feeding or apnea, and must be confirmed by laboratory testing. Rapid progression of disseminated HSV infection may manifest as shock, coagulopathy, fulminant hepatitis and diffuse lung disease before, or in the absence of, skin lesions. Because clinicians investigate infants with nonspecific signs of HSV earlier, the HSV diagnosis, based on polymerase chain reaction findings, is often made before skin lesions appear. Physicians should be alerted to and suspicious of any skin lesions appearing in the first month of life. Neonatal herpes may undergo dissemination or develop into central nervous system (CNS) infection, unless treated with acyclovir to prevent the sequelae of dissemination. Without treatment, the death rate is approximately 60%, and most survivors suffer developmental deficits. CNS morbidity is less severe with HSV-1 infection than with HSV-2 infection.

### TEACHING POINTS

- Maternal HSV disease is usually an asymptomatic primary infection.
- Prematurity is more common within HSV-infected infants (46% compared with 7% overall).
- Perinatal HSV disease can present as sepsis or pneumonia in the absence of skin lesions.
- A single vesicle should indicate the need for an encephalitis work-up.
- Physicians should investigate and treat an infant for HSV with acyclovir in the presence of :
  - cerebrospinal fluid pleocytosis and proteinosis, or
  - progressive sepsis syndrome and increased liver function tests.
- Do not wait for the appearance of vesicles before treating.
  - No skin vesicles early in life in 67% of newborns
  - No skin lesions ever in 33% of newborns