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NEONATAL HERPES SIMPLEX VIRUS DISEASE IN INFANTS LESS THAN 90 DAYS OF AGE

Abstract

Neonatal HSV disease is a devastating condition which can lead to significant morbidity and death.[1] Although it is rare, we know that sexually transmitted herpes infections have increased in the last decade, and we suspect that the number of cases of neonatal herpes is therefore increasing. We also know that the number of cases increased in the UK from the first national (BPSU) study (1986-1991) to the second (2004-2006).[2] A recent local study from Nottingham[3] showed rates ten times higher than the first BPSU study, and served as a reminder of the devastating consequences of the disease.

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.

In the decade since the last national UK surveillance there have been significant changes in the way we detect the virus, how common the virus may be in the adult population, and how we manage both pregnant women and babies who are affected. There is a lack of clarity as to the optimum management, and advice, for mothers and babies who are at risk, and for the clinicians caring for them. There are a number of different guidelines and management strategies available for clinicians to follow. This results in variation in practice across sites.
This is of specific relevance to neonates presenting to the emergency department with possible bacterial or viral sepsis. Currently not all babies are treated for HSV; however, if the prevalence of HSV has increased nationwide to the prevalence seen in Nottingham, this may need to be considered.

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Background

Herpes Simplex Virus (HSV) is very common and usually causes benign infections, such as cold sores. Infection in newborn babies is rare but can lead to dangerous illness and death. The virus can be transmitted to infants from the mother during pregnancy or delivery, or after birth from kissing or touching someone with a cold sore or herpetic whitlow.

The last HSV surveillance study was undertaken over 11 years ago. We suspect that the incidence, risk factors and outcomes of neonatal herpes disease may have changed since then. We need to collect comprehensive information to assess the current disease burden, and inform future practice on detection, prevention and treatment of this devastating disease.

Coverage

United Kingdom and Republic of Ireland

Duration

July 2019 to January 2022 (30-months of surveillance) with a 2-year follow-up until January 2024

PTO

Research Questions

The primary outcome measures will be:

1. Definition of the current burden of herpes simplex virus (HSV) disease, and the virus types, in UK and Irish infants less than 90 days, over a two-year period

2. Definition of the types of HSV disease, i.e. disseminated, meningoencephalitis or skin/eye/mouth disease

The secondary outcome measures will be:

3. Analysis of the presentations, investigations, and management of the babies affected with HSV disease

4. Analysis of the source of transmission of HSV

5. Analysis of antenatal risk factors and management of pregnant women with HSV infection

6. Analysis of short-term morbidity and mortality, as reported by the paediatricians

7. Analysis of one-year outcomes and relapse rates

Comparison of findings with those of the previous BPSU HSV studies to determine if the prevalence of disease is increasing.

Case definition

1. Any infant under 90 days of age with a diagnosis of HSV infection based on virus detection by culture, polymerase chain reaction (PCR), immunofluorescene (IF), or serology.
2. Any infant under 90 days of age that has received a completed course of aciclovir for suspected HSV infection, where no other pathogen was found.
3. Any stillborn infant in whom HSV is confirmed.

Reporting instructions

To report any cases seen within the last month that meet the case definition.

Methods

Each paediatrician reporting a child who meets the above case definition of HSV will be sent a clinical questionnaire by the study team.

Throughout the study, all patient data will be dealt with in strict confidence, and the families of affected infants will not be contacted directly by the HSV study team at any stage.

Ethics approval

Wales Research Ethics Committee 7 (reference: 19/WA/0066) and HRA Confidentiality Advisory Group (reference: 19/CAG/0077). Public Benefit & Privacy Panel, Scotland approval is awaited.

Support group

The Herpes Viruses Association (http://www.herpes.org.uk).

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References;

1. Fidler K, Pierce CM, Cubitt WD, et al. Could neonatal disseminated herpes simplex virus infection be treated earlier? Journal of Infection 2004; 49(2): 141-146
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3. Batra D, Davies P, Manktelow BN, Smith C The incidence and presentation of neonatal herpes in a single UK tertiary centre, 2006-2013. Arch Dis Child. 2014 Oct; 99(10):916-21.