Invasive fungal infection occurring in low birthweight infants

A national surveillance study has been launched to look at the rate of invasive fungal infection in low birthweight infants. The survey has been prompted by the rise in morbidity and mortality in pre-term infants caused by candida. The rate of fungal infection is estimated to be about 2 in 100 babies who are born at a weight below 1,500g (Saiman et al, 2000; Stoll et al, 1996). It is likely that the increasing incidence is due to the improved survival rates of these very young babies. Fifteen years ago very premature babies would have been of 29–30 weeks’ gestation – currently they are more likely to be aged 25–26 weeks. But their extreme prematurity means that they need more invasive and intensive care.

**Why infection occurs** The environment these babies are nursed in and the treatment they need provide fungi with the ideal environment to invade and grow. Delicate friable skin requires a warm and humid atmosphere that fungus likes.

The use of broad-spectrum antibiotics to protect these babies inevitably invites fungal growth. Invasive treatment, for example the use of central lines, offers a direct route for infection.

The surveillance study has been welcomed by Katrina Denton, senior neonatal nurse at Darlington Memorial Hospital and chair of the RCN’s paediatric and neonatal intensive care nurses’ forum. She explains that although fungal infection is a relatively easy condition to treat on the skin, it is much more serious when it is invasive.

‘The fungal infection affects the bloodstream and the gut and, in serious cases, can damage the kidneys and cause renal failure,’ says Ms Denton.

‘It can be difficult to pick up but clinical symptoms can alert you to its presence. Typically this infection is not a problem in the first week or two of the baby’s life.

‘If you are nursing a baby who has been doing well for the first two or three weeks of life you may notice that he or she becomes less stable. The baby may have unstable temperature control, abdominal distension or low blood pressure. Investigations will commonly reveal a fungal infection.’

Ms Denton hopes that the survey can give some pointers as to why the incidence is increasing: ‘I am pleased that this survey is taking place. We may discover that it is product or procedure-linked or it may have its routes in cross-infection.’

**Identifying the risk factors** Susan Macqueen is a clinical nurse specialist and lead clinician in infection control at Great Ormond Street Hospital in London. As well as promoting high standards of infection control, Ms Macqueen is called to a unit if a pattern of infection starts to develop.

A few years ago Ms Macqueen and her team discovered that the wooden tongue depressors used as splints for intravenous lines in pre-term babies were causing infection with the fungus rhizopus. Their use has now been discontinued.

Ms Macqueen says: ‘Rhizopus was a specific identifiable problem that we tracked down in a relatively short time. But what is it in the low birthweight baby that is giving higher incidence of candida? Is it the treatments, the environment or something else? I think this survey will enable us to home in on some of the increased risk factors. We may then be able to reduce some of the cases but not all.’

Some of the risk factors for fungal infections, such as the humid atmosphere, are unavoidable but staff can help to reduce the rate of fungal infection by adhering to the basics of infection control.

**The importance of quality infection control** Ms Macqueen says it is not uncommon that having failed to find a cause for a spate of infections the problem disappears, as a result of having raised awareness of infection control.

‘Adhering to the basics of infection control is essential,’ says Ms Macqueen. ‘The Neonatal Nurses Association has been very proactive in improving standards in preventing and controlling hospital-acquired infections. Handwashing is still not as good as it should be, although it is improving slowly. Sometimes these babies do need urgent attention and handwashing between patients can be replaced with the use of alcohol handrubs which should be on every unit.’

**The surveillance study** The study is being undertaken over 13 months and is a collaboration between the Health Protection Agency (HPA), the Scottish Centre for Infection and Environmental Health (SCIEH) and the British Paediatric Surveillance Unit (BPSU). The study is being coordinated by the Tayside Institute of Child Health.

The researchers hope to provide an accurate UK-based estimate of the incidence of invasive candida, as well as a picture of which babies are most at risk and how the condition commonly presents.

The results from the surveillance study – which are expected to be published in spring 2004 – should promote further research in this area to look at the best ways to prevent and treat this infection in very low birthweight babies.

**REFERENCES**


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Kathryn Godfrey is a freelance journalist

As a national surveillance study of invasive fungal infections in low birthweight infants is launched, Kathryn Godfrey outlines some of the possible reasons for the increase in the rate of infection in this vulnerable group of patients