

Early repeated white cell counts critical in reducing infant deaths from pertussis

A study from California found that taking early and repeated white blood cell counts is critical in determining whether infants have pertussis and which of those children are at highest risk of death from the disease.

Murray et al's (2013) retrospective study used medical records from five Southern California paediatric intensive care units between September 2009 and June 2011. Of the 31 infants studied, eight had more severe infection, including suffering from pulmonary hypertension and death from the pertussis.

Infants who had more severe disease had higher white blood cell counts (median peak white blood cell counts of 74 100 compared to 24 200 among

infants with less severe disease). All but one of those with more severe disease had at least a 50% increase in white blood cell counts within 48 hours, and none of those with less severe disease had more than a 50% increase in white blood cell counts.

Infants with more severe infections had higher maximum heart and respiratory rates and were more likely to develop pneumonia; these conditions occurred earlier after illness onset in this group. These infants were also more likely to have seizures, hypotension or shock, renal failure, and more likely to be intubated and receive exchange transfusions.

Six infants received exchange transfusions, and four of those

died. Those four were all in shock at the time of their transfusions; the two who survived were not in shock at the time of transfusion.

'Because very young infants have not yet been vaccinated and are at the highest risk for severe disease, we need to better manage and treat it,' said Erin Murray, lead author and epidemiologist at the California Department of Public Health. 'This study shows the importance of aggressive pediatric intensive care.'

Murray EL, Nieves D, Bradley JS et al (2013) Characteristics of severe *Bordetella pertussis* infection among infants ≤ 90 days of age admitted to pediatric intensive care units – Southern California, September 2009–June 2011. *J Ped Infect Dis* 10 January (Epub before print)

Rifaximin-alpha launched for hepatic encephalopathy

Rifaximin-alpha 550 mg tablets (Targaxan 550) are now licensed in the UK for 'the reduction in recurrence of episodes of overt hepatic encephalopathy in patients ≥ 18 years of age'. Hepatic encephalopathy is a potentially life-threatening neuropsychiatric condition associated with liver disease.

Safe UV levels exceeded by almost 90% of sunbeds

Researchers from the University of Dundee have found that levels of ultraviolet radiation exceed safe limits in 89% of sunbeds, and emissions are increasing because new high power sunlamps are being used.

'Good' bacteria may have role in Crohn's disease

University of Aberdeen scientists have found significantly high levels of *Faecalibacterium prausnitizii* in the colon of children with Crohn's disease, and suggest that it may have a role in development of this disease. Until now *F. prausnitizii* had been 'protectively' associated with Crohn's disease, because it was found in low levels in these patients, and it has anti-inflammatory properties.

Ultrasound elastography to replace liver biopsy in diagnosis of liver fibrosis

A non-invasive ultrasound test is set to reduce the need for liver biopsy across the NHS following a guide published by the NHS Technology Assessment Centre (2013). The guide will help NHS trusts to implement this non-invasive and cost-effective diagnostic procedure rapidly.

The prevalence of liver disease is increasing in the UK. Later stage liver disease, or liver fibrosis, is associated with significant morbidity and mortality. Establishing the presence and extent of liver fibrosis is therefore crucial in managing a patient's health.

Previously liver fibrosis could only be assessed by undertaking a liver biopsy.

There are considerable downsides to this procedure, because of its invasive nature, an inherent risk of infection and the high costs of a surgical procedure and hospital attendance as an inpatient.

Ultrasound elastography provides safer and quicker diagnosis with no discomfort or worries about surgery, as well as reducing costs by an estimated £520.

The NHS Technology Adoption Centre studied the implementation of ultrasound elastography within secondary care at King's College Hospital NHS Foundation Trust, The North West London Hospitals NHS Trust and East Cheshire NHS Trust. They then drew

up the pack of information and practical tools based on their findings.

The pack specifically looks at what the technology is, how it works and what benefits can be realized, focussing upon the clinical, financial and system aspects. It is hoped that, by using the pack, trusts will be able to successfully implement this technology in a planned and sustainable way.

NHS Technology Adoption Centre (2013) The Use of Ultrasound Elastography for the Detection and Assessment of Liver Fibrosis. A Technology Implementation Study Within Secondary Care. www.ntac.nhs.uk/nmsruntime/saveasdialog.aspx?IID=1306&csID=1191 (accessed 28 January 2013)