Fantoms

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Ben Stenson, *Deputy Editor*

Benchmarking to improve quality of care

Several important papers in this month's issue highlight the value of collaborating to collect and analyse routine clinical data. 14 neonatal units in Ireland and Northern Ireland participate in the Vermont Oxford Network (VON). This has permitted the first all Ireland international benchmarking report in any medical specialty. Murphy *et al* compare the outcomes of almost 3000 very low birth weight (VLBW) infants cared for in Ireland and Northern Ireland from 2004–2007 with the 192 000 VLBW infants in the VON. Overall mortality was not significantly different, although survival in the most immature infants with birth weight less than 750g was consistently higher in VON infants. Chronic lung disease rates were higher in VON infants. The rate of bloodstream sepsis due to coagulase negative staphylococci in infants in Ireland and Northern Ireland (25–26%) was consistently double that observed in VON infants (12–13%). The authors highlight the need for a focussed quality improvement initiative driven by these data. ***See page 30***

Predicting clinical risk

Mantkelow *et al* analyse population-based regional UK data from the 30 NICUs contributing to the Neonatal Survey (TNS). They used data from 3266 infants born at 22-32 weeks gestation to validate and re-calibrate CRIB-II, both with and without temperature on admission. Interestingly, the re-calibrated CRIB-II under-predicted mortality for infants with normal admission temperature (141vs 167) and over-predicted mortality for infants with abnormal admission temperature (175 vs 150), performing better when the temperature element was removed. The link between temperature and morbidity is complex. It is difficult to separate it from other factors and because it is determined by the quality of early neonatal care the authors suggest that it is removed and propose a re-calibrated CRIB-II score without the temperature element as a suitable measure for benchmarking. ***See page 9***

Isobars for outcomes

Cole *et al* analysed data collected on 1456 infants born at 22–31 weeks gestation in the Northern Region of England and a further 3382 born in the Trent region. Their aim was to produce a tool that might predict the survival to term of infants delivering prematurely, using data that were only available at or shortly before birth. This might be useful in benchmarking or in antenatal counselling. They developed a novel graphical way of presenting the complex interaction of birth weight centile or base deficit and gestation on survival. This is presented as a series of lines or "Isosurvs" showing the way that changes in birth weight and gestation influence outcome**.** ***See page 14***

Well infants with meconium stained amniotic fluid

Many aspects of the postnatal management of infants born with meconium staining of the amniotic fluid (MSAF) are now evidence based. Some consider that such infants merit a period of postnatal observation of up to 24 hours. In the UK, National Institute for Clinical Excellence (NICE) guidance stipulates a programme of regular observations for 12 hours. Van Ierland *et al* describe a cohort of 394 babies with MSAF. Considering those with a 5 minute Apgar score of 9 or 10, meconium aspiration syndrome developed in one infant out of 298 and this infant was symptomatic by 15 minutes of age. The authors identified no reason to compel routinely extending postnatal observations in apparently well babies with MSAF. In a provocative accompanying perspective Sam Oddie raises the issue of whether we want guidelines in areas where the evidence is lacking. All we need now is to show whether intubating non-vigorous infants with MSAF for tracheal suction is beneficial. ***See pages 69 and 7***

CSF microscopy

How long do your microbiology specimens sit waiting for collection and transport to the laboratory? Rajesh *et al* measured the cell count and glucose at 30 minutes, 2 hours and 4 hours on CSF specimens that were taken to investigate possible sepsis. None of the specimens in the series were culture positive. CSF white count declined serially over time by a surprising amount—enough to change the clinical response to the information in some cases of moderately elevated cell count. ***See page 25***

EEG suppression after surfacntant

Suppression of EEG activity lasting 12 hours after surfactant treatment was observed by van den Berg *et al* in 16 infants treated using the "Insure" approach to surfactant administration. EEG suppression after surfactant has been noted by earlier authors on a shorter time-scale and this observation remains unexplained. In this study cerebral oxygenation and haemodynamic disturbance did not appear to be the explanation and the authors speculate on whether it may be due to opiates administered for elective intubation. Naloxone was given and this has reversed EEG suppression due to morphine in other reports so this may not be the whole explanation. ***See page 53***

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