



CrossMark

# Highlights from this issue

Ben J Stenson

## PRENATAL STEROIDS AT 34–36 WEEKS GESTATION

Editors choice this month and free to download is this leading article by Gordon Smith, David Rowitch and Ben Mol. The history of neonatology is littered with examples of widely popular treatment approaches that proved to be harmful when better evidence became available. This article cautions against the use of prenatal steroids at 34–36 weeks gestation, arguing that the benefits are short term outcome measures and the plausible risk of long term consequences has not yet been evaluated adequately. With a number needed to treat of 35 mothers to prevent one newborn infant from requiring respiratory support 3 days after birth, a great many mothers and infants would be exposed to treatment in pursuit of this short term outcome advantage. It is argued that there is insufficient evidence of long term safety to justify this. *See page F284*

## POST-TERM PREGNANCY IS AN INDEPENDENT RISK FACTOR FOR NEONATAL MORBIDITY

Nehama Linder and colleagues analysed the outcomes of around 23 thousand live born infants from low risk pregnancies delivered at a single centre in Israel over a 5 year period. Neonatal morbidities were assessed in three groups according to their gestation at birth: post-term ( $\geq 42+0$  weeks), late term ( $41+0$  to  $41+6$  weeks) and full term ( $39+0$  to  $40+6$  weeks). Post-term pregnancy versus full-term pregnancy was associated with an increased risk of NICU admission (OR 2.0, 95% CI 1.4 to 2.8), respiratory morbidity (OR 2.2, 95% CI 1.3 to 3.8) and infectious morbidity (OR 1.88, 95% CI 1.32 to 2.69). Similar observations applied to comparisons of post-term pregnancy versus late-term pregnancy. As these were low risk pregnancies the absolute risks of these adverse outcomes were low so that around 38 post term pregnancies would need to be avoided to prevent a neonatal unit admission. The study did not have statistical power to compare risks of neonatal mortality. Pregnancies with complications were excluded so the study does not measure all of the risks of post-maturity but highlights that risks are increased even when there are no concerning features. *See page F286*

## RESEARCH ETHICS COMMITTEE DECISION-MAKING

Gale and colleagues examined the acceptability to UK research ethics committee of a protocol for a comparative effectiveness trial of two different approaches to blood transfusion in preterm infants. The protocol described the use of electronic patient records for patient identification, randomisation and data acquisition, a short two-page information sheet, explicit mention of possible inclusion benefit, and utilised an opt-out consent model with enrolment as the default. They submitted their protocol to 12 different UK research ethics committees. One REC raised concerns about the short parent information sheet, 10 about inclusion benefit and nine about opt-out consent. Following responses to queries, nine RECs granted a favourable final opinion and three rejected the application because they considered the opt-out consent process invalid. The findings, that a majority of RECs would allow the use of short information sheets, opt-out consent and mention of possible inclusion benefit in neonatal comparative-effectiveness research should help the development of future trials. *See page F291*

## HYPERGLYCAEMIA IN INFANTS WITH HYPOXIC-ISCHAEMIC ENCEPHALOPATHY AND EFFICACY OF THERAPEUTIC HYPOTHERMIA

Previous work from this group has shown that infants with hypoxic ischaemic encephalopathy who are hypoglycaemic in the 12 hours after birth are at increased risk of adverse outcome. In this study Sudeepa Basu and colleagues re-analysed data from the CoolCap study to examine associations between glycaemic profiles in the 12 hours after birth and the efficacy of hypothermia treatment. Although normoglycaemic infants had the best outcomes overall, they did not gain the most benefit from cooling. There were statistically significant improvements in outcome associated with cooling in infants who were hyperglycaemic in the 12 hours after birth, but not in those who were normoglycaemic or hypoglycaemic. They authors discuss whether the hyperglycaemia was a marker for the timing and nature of the underlying insult, identifying infants with asphyxia of recent occurrence where energy reserves were not exhausted and the insult was within the therapeutic window in comparison with more chronic

insults less amenable to modification. *See page F299*

## HAEMOGLOBIN DIFFERENCES IN TWINS

Lianne Verbeek and colleagues examined haemoglobin differences between vaginally delivered first and second born twins. Both monochorionic and dichorionic twin pairs were studied. Whether they were monochorionic or dichorionic, second born twins had higher haemoglobin levels and were more often polycythaemic than first born twins. Since dichorionic twins do not have placental vascular anastomoses, inter-twin differences in haemoglobin levels must have additional contributors that are not related to chorionicity such as different degrees of placental transfusion. There were not significant inter-twin differences in haemoglobin after caesarean delivery. *See page F324*

## MANAGEMENT AND INVESTIGATION OF NEONATAL ENCEPHALOPATHY

This review article by Kathryn Martinello and colleagues gives a detailed overview of the current knowledge regarding diagnosis and management of neonatal encephalopathy, with helpful sections on differential diagnosis, resuscitation, supportive care, seizure management, prognostication and neuroprotective therapy. *See page F346*

## ANAESTHETIC CONSIDERATIONS FOR SURGERY IN THE NEWBORN

Constance Houck and Amy Vinson review the most recent animal and human evidence regarding the effects of general anaesthesia and anaesthetic-related haemodynamic changes on the developing brain of newborn infants. They advise that until more data emerge to guide practice, it is incumbent on all paediatric specialists to ensure that exposure to general anaesthesia is as brief as possible and that the risks and benefits are carefully weighed for all imaging studies and surgical procedures in infants. *See page F359*

## PATIENT- AND FAMILY-CENTRED CARE FOR NEWBORNS IN THE NEONATAL INTENSIVE CARE UNIT

Jean-Michel Roué and colleagues review evidence of the detrimental impact of overwhelming environmental sensory inputs, such as pain and stress, on the developing human brain and describe strategies aimed at preventing this. *See page F364*