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# Highlights from this issue

Ben Stenson, *Edition Editor*

There is so much in the journal this month that will be of wide interest that it is difficult to know where to start. The original science is strong and so are the invited editorials and review articles. Strong themes include late and moderately preterm infants, neurology and neuroprotection and respiratory physiology. We have included a quality improvement project on infant feeding showing the potential to shorten time to full feeds and length of stay if the results can be replicated. We are interested in seeing more quality improvement work and would welcome the submission of short articles (up to 1200 words and five references) describing convincing quality improvement innovations that can be readily implemented.

## DURATION OF RESUSCITATION WITH APGAR ZERO

There is another report in this month's issue of the outcomes of survivors who were successfully resuscitated after having an Apgar score of zero at 10 minutes. Shah and colleagues describe 13 infants from Western Australia. Eight of the infants died. Four of the five survivors had good follow up outcomes. It is impossible to make a reliable real-life estimate of the mortality risk when resuscitation continues beyond 10 minutes with an Apgar score of zero because there must be a great many infants who have died and not been reported. But since their outcome would also have been death had resuscitation not continued, it is more important to consider the outcomes of the infants who survive. There are now published data from more than 100 such infants and, although many have serious impairments, close to half of those reported are functioning normally. In an accompanying editorial that is free to access, Dominic Wilkinson and I argue that the Apgar score at 10 minutes is not a good enough measure for determining outcome and that resuscitation should usually be continued for longer. If practice changes there will be a need for close

audit of the outcomes to measure the effects. *See pages F492 and F476*

## LAMBS

The Late And Moderately Preterm Birth Study (LAMBS) is a prospective population based study of outcomes for infants born at 32–36 weeks gestation compared to a random sample of term-born infants. Elaine Boyle and colleagues gathered data on 1146 infants born at 32–36 weeks and 1258 randomly selected term infants. Here they report short term hospital outcomes. Although the majority of these preterm infants had straightforward clinical course they greatly outnumber the extremely preterm infants who command most of the attention in relation to prematurity. The late and moderately preterm babies were often admitted to neonatal units and more often required neonatal resuscitation. An accompanying editorial by John Zupancic likens this situation to the Pareto principle as this sub population of infants accounts for the lion's share of neonatal unit and later resource usage. There is considerable variation in practice and a lot to be learned from applying quality improvement methodology to the care of this population group. As part of the same study, Lucy Smith reports the association of maternal lifestyle factors with these preterm births, with maternal diet and smoking identified as potential areas that strategies may target in studies aimed at reducing this population of infants. In a second accompanying editorial Amit Mathur discusses their findings in the context of existing knowledge about the causation of preterm birth. *See pages F479, F472, F486 and F474*

## IS NIRS CLINICALLY USEFUL IN THE PRETERM INFANT

This presently remains elusive but this review article by Christine Sorica Da Costa and colleagues suggests that we may be tantalisingly close to the answer. Improvements in the technology have made NIRS monitoring practicable for use in multicentre clinical studies to evaluate the technology as a tool for optimising

cerebral oxygenation. It remains to be shown whether the short term advantages in terms of cerebral oxygenation can be translated into differences in major adverse outcomes in larger clinical studies. *See page F558*

## MAGNESIUM SULPHATE NEUROPROTECTION FOR PRETERM INFANTS

Sam Oddie and colleagues review the evidence base for the protective effect of antenatal magnesium sulphate against cerebral palsy in preterm infants and explore why despite high quality evidence this well-researched treatment is still less widely used in the UK than in other parts of the world. Lessons from the past about implementation of research findings need to be learned and neonatologists have a role in shaping local policy. *See page F553*

## NEWBORN NEUROPROTECTION – WHERE NEXT?

Hypothermia treatment has been a hugely important advance. It reduces the percentage of infants who will die or develop neurodevelopmental disability. However, the absolute risk reduction is around 11% and many infants still have adverse outcomes. This review article by Jane Hassell and colleagues provides insight into the current state of knowledge for a wide range of emerging therapies aimed at modifying the outcome of the secondary and tertiary phases of brain injury. *See page F541*

## NEUROREHABILITATION – EVIDENCE AND CHALLENGES

This review article summarises developments in neurorehabilitation after neonatal intensive care. Progress has been made in sensory and motor neurorehabilitation through multicenter studies and collaborations between subspecialties. Less is known about rehabilitation for cognition, communication and behavior. A great deal of work is underway through large scale projects and further progress is likely. *See page F534*