Improvements in outcomes for extremely preterm babies

Cohort studies suggest that outcomes after extremely preterm birth have improved in the UK between 1995 and 2006.

Overview: Preterm birth is defined as birth that occurs before 37 weeks of pregnancy. In England there are around 54,000 preterm births each year, which represents approximately 8% of all live births. Most of these preterm births occur between 32 and 36 weeks, with around 13,500 births (2%) occurring before 32 weeks.

Preterm birth is associated with a range of adverse outcomes for the baby. These include increased rates of perinatal death, neonatal morbidity, and long-term problems mainly affecting the neurological and respiratory systems. The risk of adverse outcomes is inversely proportional to length of gestation. Infants born extremely premature (before 28 weeks) have substantially worse outcomes than those born moderately premature (34–37 weeks).

Current advice: NICE is developing guidance on premature labour and birth. Aspects of preterm labour are covered in the following NICE guidance: antenatal care, caesarean section, diabetes in pregnancy, induction of labour and multiple pregnancy.

New evidence: The EPICure studies compared 2 cohorts of babies born extremely prematurely in 1995 and in 2006 (Costeloe et al. 2012 and Moore et al. 2012). Details of all births at 22–26 weeks’ gestation or babies born earlier weighing at least 400 g from all maternity hospitals in England in 2006 were included. For the 1995 cohort, data confirming gestational age were available only for babies admitted to intensive care units (n=666), so analyses of the 2006 cohort were restricted to babies admitted for intensive care (n=1115).

Costeloe et al. 2012 reported that in 2006, the proportion of babies born after exposure to tocolytics and antenatal steroids increased, and antenatal haemorrhage decreased compared with 1995. Overall, survival to discharge from hospital increased by 13% from 40% in 1995 to 53% in 2006. Increases in survival were affected by gestational age: 9.5% for those born at 23 weeks; 12% at 24 weeks, and 16% at 25 weeks. The proportion of babies surviving with major neonatal morbidities did not differ between 1995 and 2006.

Moore et al. 2012 assessed neurological and developmental outcomes at 3 years. Data from the Office for National Statistics showed that survival to 3 years increased by 13% from 39% in 1995 to 52% in 2006. The proportion of babies surviving with severe disability increased by 2.6%, and those surviving without disability increased by 11%. However increases in survival and survival without disability were significant only for babies born at 24 and 25 weeks’ gestation. Rates of cerebral palsy did not change overall, but more children had hemiplegia in the 2006 cohort.

Commentary: “These reports demonstrate increased survival with better overall neurodevelopmental outcomes at 3 years for extremely premature babies born in the UK in a 2006 cohort compared with the 1995 cohort. Significant changes in clinical practice over that period were increases in antenatal...
steroid administration, decreased postnatal steroid use, prevention of early hypothermia and centralisation of neonatal services with increased use of neonatal transport.

“The data suggest that these changes in clinical practice may have reaped considerable survival benefits for the most vulnerable preterm infants. However the data demonstrate 2 key points: the pattern of associated morbidities remains largely unchanged and an increasing number of surviving extremely preterm infants are at risk of long-term health, social and educational problems. The provision of home oxygen for neonatal chronic lung disease has increased, as has intervention with laser therapy for retinopathy, likely reflecting improvements in community services and in the detection and treatment of retinopathy.

“Areas in which improvement is lacking include early growth in the preterm population and the morbidities associated with late neonatal infection and necrotising enterocolitis. Efforts targeting these complications may yield further improvements in outcomes. The increased survival after extreme preterm birth has implications for later demands on health, educational and social services.

“These studies are limited by patients lost to follow-up and so the data reported may be an underestimate of the extent of future health burdens. Accurate evaluation of interventions to offset these burdens will be facilitated by national computerisation of data collection and standardised monitoring of short and longer term neurodevelopmental outcomes.” – Professor Howard Clark, Head of the Department of Child Health, University of Southampton

Study sponsorship: UK Medical Research Council.

About this article: This article appeared in the August 2013 issue of the Eyes on Evidence e-bulletin. This free monthly e-bulletin from NICE Evidence outlines interesting new evidence and what it means for current practice. They do not constitute formal NICE guidance. The opinions of contributors do not necessarily reflect the views of NICE.

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