Nasal intermittent positive pressure ventilation

There is increasing use of non-invasive methods of respiratory support to help extremely preterm infants to be managed without endotracheal intubation and ventilation. In addition to nasal continuous positive airway pressure (CPAP), many units now use high flow nasal cannula oxygen therapy and various forms of nasal intermittent positive pressure ventilation (NIPPV). Despite their popularity there is little evidence that these modes of support offer advantages over CPAP in terms of important outcomes. Hopefully some of this uncertainty will be resolved by the large international randomised controlled trial of NIPPV that is in progress. Owen et al describe a mechanistic study of the effects of NIPPV on breathing and gas exchange. Non-synchronised ventilator generated NIPPV was delivered to preterm infants using a mechanical ventilator through Hudson prongs. Analysis of the traces showed that NIPPV pressure peaks were delivered during spontaneous inspiration 40% or the time, with 60% being delivered during expiration. It was difficult to discern any effect of the NIPPV on spontaneous breathing. During apnoea, 5% of NIPPV pressure peaks produced detectable lung inflation, with volumes approximately 26% of the spontaneous tidal volume. There is clearly a lot more work required to determine the role and optimal delivery of these techniques. See pages F394 and F392

Chest compressions

Guidelines for neonatal cardiopulmonary resuscitation (CPR) differ from those in older age groups with respect to the recommended ratio of chest compression to ventilation. Neonatal cardiac arrest is usually caused by profound hypoxia which will not be reversed without lung recruitment and ventilation, but frequent interruptions to compressions with a 3:1 ratio could prevent the establishment of the coronary perfusion pressure required to enable a return of spontaneous circulation. Solevåg et al compared compression to ventilation ratios of 3:1 and 15:2 in newborn piglets asphyxiated to asystole. They found no difference in return of spontaneous circulation. With both ratios, 9/11 animals responded. With both ratios, diastolic blood pressure during CPR remained low and the recommended number of compressions of 90/min was not achieved. Further studies comparing longer series of uninterrupted compressions are required, ideally in a model that has not already adapted to extrauterine life, where the need to recruit the lungs is a part of the process. See page F417

Breast milk for preterm infants

Substantial differences exist between regions of Europe in the proportion of all babies who are breast fed. Bonet et al looked at European regional variations in the proportion of very preterm infants who are breast fed at the time of discharge from hospital and the variation was startling, with rates among eight European regions varying between 19% and 70%. The variability remained after adjusting for infant and maternal characteristics. It is clearly possible to achieve high rates and the figures provide inspiration for change wherever rates are low. See page F450

Heroin addiction in pregnancy

In England, approximately 46 500 female heroin addicts are receiving treatment, the vast majority of whom are of childbearing age. Methadone treatment is widely prescribed for pregnant mothers to reduce some of the harms but there is an increasing concern about potential adverse effects on the developing brain of the unborn child. In a review article, Helen Mactier argues the need for large well-controlled studies to measure the long-term outcomes on the child of current treatment practices. See page F457
Highlights from this issue

Ben J Stenson

*Arch Dis Child Fetal Neonatal Ed* 2011 96: F391
doi: 10.1136/adc.2011.301112

Updated information and services can be found at:
http://fn.bmj.com/content/96/6/F391

**Email alerting service**

Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/