L106

EXOGENOUS SURFACTANT IN THE NEONATE SUGGESTIONS FOR THE USE IN THE DEVELOPING COUNTRIES

Giulio Bevilacqua, *University of Parma, Italy*

In spite of the improvement of perinatal assistance, the frequency of the Respiratory Distress Syndrome of preterm babies (NRDS) remains very high.
The estimated incidence of NRDS in babies with a birth weight 500- 750. (very low birth weight -VLBW) reaches the value of 86%.
In the last ten years survival of babies with NRDS, significantly improved with introduction of new techniques of prevention and of treatment of the disease, mainly with the diffusion of the use of the exogenous surfactant.
The exogenous surfactant administration in VLBW, either as prophylaxis or as rescue treatment of NRDS, is effective in reducing mortality, morbidity and need for respiratory supports.
No adverse effects related to surfactant administration have been reported.
However there is great variability in the use of the surfactant treatment, within and between countries in Europe and out of Europe, related not only to a different medical strategies and organisations, but also to the costs. The surfactant preparations currently on market are relatively expensive and their supply relatively limited. We must remember, also, that to achieve good results, the supplementary surfactant must be given by qualified physicians trained in neonatal intensive care and in management of mechanical ventilation of preterm babies.
Supplementary surfactant should be used routinely, only, in neonatal intensive care units having the necessary facilities for mechanical ventilation and resuscitation of VLBW infants.
For all these reasons, in the developing countries it is necessary to identify strategies compatible with the health organisation of the country considered.
At the moment, any scheme for prevention and treatment of NRDS, should include the prenatal prophylaxis, with a single course of corticosteroids, given to the mothers at risk of preterm delivery before 34-wk. gestational age (ge). Repeated courses of corticosteroids must be used cautiously, because they may have lasting negative side effects on foetal growth and neurological development, whereas clear benefits for the foetus have not yet been shown.
After birth exogenous surfactant might be use as prophylaxis or as rescue treatment.
In new-borns with ge, 26-28 wk. and with evidence of high risk for NRDS (male sex, perinatal asphyxia, need of intubation at birth, incomplete course of antenatal corticosteroids, caesarean section, multiple pregnancies, maternal diabetes) the early administration, in the first minutes of life, of a single low dose of surfactant improves the outcomes and results more effective then delayed treatment and therefore it is recommended. In the spontaneously breathing babies, continuous positive airway pressure (CPAP), after a brief intubation, might be useful to avoid mechanical ventilation.
In the new-borns, with gestational age > 28 weeks with NRDS, treatment may be delayed, to reduce the number of unnecessary administrations and reserved to the babies that need intermittent positive pressure ventilation (IPPV). In that cases the full dosage of the available surfactant is mandatory.
In extremely low gestational age new-borns (<26 wk.) the surfactant administration must be evaluated case by case and discussed with the parents because of poor outcomes of these babies.

L107

GLOBAL, REGIONAL AND NATIONAL PERINATAL AND NEONATAL MORTALITY

Victor Y.H. Yu, *Department of Paediatrics and Ritchie Centre for Baby Health Research, Monash University, Melbourne, Australia*

Globally, the perinatal mortality rate (PMR) is 53/1000 (7.5 million annual perinatal deaths) and the neonatal mortality rate (NMR) is 36/1000 (5.1 million annual neonatal deaths). Of the 141 million annual livebirths, 127 million (90%) are born in developing countries, which, compared to developed countries,

have a higher PMR (57/1000 vs 11/1000, 5.2x) and NMR (39/1000 vs 7/1000, 5.6x). Five million annual neonatal deaths (98% of the world's total) occur in developing countries. Regional annual livebirths figures are: Asia-Oceania 76 million, Africa 31 million, Central and South America 12 million, Europe 8 million, and North America 4 million. Regional annual neonatal death figures are: Asia-Oceania 3.3 million, Africa 1.3 million, Central and South America 0.3 million, Europe 0.07 million, North America 0.03 million. The Asia-Oceania region has a PMR of 53/1000 and a NMR of 41/1000. It has half of the world's livebirths and two-thirds of the world's neonatal deaths. The PMR and NMR have often been used as an indicator of the standard of a country's social, educational and healthcare systems. Strategies, which address inequalities both within a country and between countries, are necessary if there is going to be further improvement in global perinatal health.

L108

SPECIAL RESUSCITATION CIRCUMSTANCES

İlknur Kılıç, *Division of Neonatology Pamukkale University, Denizli, Turkey*

Meconium Aspiration

If the amniotic fluid contains meconium and the infant has absent or depressed respirations and decreased muscle tone direct laryngoscopy and intubation / suction of the trachea should be done. It has been shown that intubation and suctioning of the apparently vigorous meconium stained infant does not result in a decreased incidence of meconium aspiration syndrome or other respiratory disorders. Complication of intubation are infrequent and short lived.

Pneumothorax

A pneumothorax is a potential problem whenever positive pressure ventilation is used. A pneumothorax should be suspected in any infant who is improving during a resuscitative effort and then suddenly decompansates. Unilaterally decreased breath sounds, distant heart sounds, shift in the point of maximal cardiac impulse, and persistent syanosis are the signs of pneumothorax. When immediate intervention in the delivery room is needed, it may necessary to insert a needle into the thorax before radiographic confirmation.

Diaphragmatic hernia

Immediate tracheal intubation should be performed to minimize air entry into the gastrointestinal tract. A nasogastric tube should be placed to allow intermittent suction to decompress the small bowel and minimize lung compression.

Erythroblastosis/Hydrops

If the infant is extremely anemic, a coordinated team should be prepared to perform a partial exchange transfusion. Initial lung expansion may be a problem in pleural effusion and ascites. After an airway has been secured, thoracentesis and/or paracentesis may improve ventilation and oxygenation.

L109

RESUSCITATION OF THE NEWBORN WITH ROOM AIR OR OXYGEN?

Ola Didrik Saugstad, *Department of Pediatric Research, The National Hospital, University of Oslo, Norway*

Three new sets of guidelines for resuscitation of the newly born infant have been published the last years. One of these recommends the use of ambient air for basic resuscitation of the newly born and two that 100% oxygen is used.

In 1998 WHO stated that "Additional oxygen is not necessary for basic resuscitation". But the WHO guidelines also added: "However, when the newborn's colour does not improve despite effective ventilation, oxygen should be given if available". Thus the WHO statement acknowledges recent animal and clinical data and also recognizes that oxygen is both expensive and not readily available throughout many places in the world.

The International Liaison Committee on Resuscitation (ILCOR) and American Heart