

Editorial

Neonatal intensive care in India is gradually improving with the emergence of many tertiary care NICU's. Respiratory distress syndrome (RDS) is the commonest neonatal emergency especially in premature babies. Hyaline membrane disease (HMD) is a condition due to lack of surfactant, predominantly seen in extremely premature infants. More than half of the babies born before 28 weeks of gestation develop HMD. Even though supportive care of these infants is of paramount importance, the aim of management is to improve alveolar gas exchange and maintain normoxemia & normocapnia.

Managing a baby with RDS still remains a challenge. Mechanical ventilation has remarkably improved the outcome in these infants. Continuous positive airway pressure (CPAP) was first used in newborns with RDS in 1971 to improve oxygenation. Over the last few decades, large number of infants with RDS have benefited with the use of CPAP. Early use of nasal CPAP significantly reduces the need for endotracheal intubation and mechanical ventilation. Recent data suggests that endotracheal delivery of surfactant followed by nasal CPAP is a useful treatment modality in infants with moderate HMD. Newer CPAP devices like Bubble CPAP and Infant Flow Device (IFD) look promising and with more experience are likely to be used more often. The main aim of mechanical ventilation is to use minimum pressures and FiO₂ to optimize gas exchange. This also helps to reduce barotrauma/volutrauma and lung toxicity. Infants needing high ventilatory pressures have a risk of developing chronic lung disease (CLD) or bronchopulmonary dysplasia (BPD). Many strategies like use of high frequency oscillation (HFO) have been tried, yet we do not have an appropriate solution that significantly reduces incidences of CLD.

Surfactant replacement therapy has been the most important discovery of this century. Numerous trials have been reported in the literature, showing beneficial use of surfactant in infants with HMD, as it reduces the need for supplemental oxygen, mechanical ventilation, risk of air leak syndromes and mortality. However, the effect on incidence of intraventricular hemorrhage

(IVH), necrotizing enterocolitis (NEC), retinopathy of prematurity (ROP) and CLD is not significant. Surfactant is slowly delivered into the lungs of infants with HMD over a period of 10-12 minutes. Natural surfactants extracted from bovine or porcine lung are more effective as compared to synthetic surfactants. With easier availability of surfactant in our NICU's its usage is increasing with promising results and better outcome in infants with RDS.

Nutritional support is of critical importance for ultimate recovery of tiny sick neonates. Often enteral feeds are not able to meet the nutritional requirements during first few weeks of life. With advances in Parenteral Nutrition and its early institution the outcome of very low birth weight babies has improved significantly. Early enteral feeding is vital, small trophic gut priming feeds should be started as soon as the infant is hemodynamically stable. Many babies who are neurologically compromised or have gastroesophageal reflux are not able to tolerate oral enteral feeds. Intra-gastric, gastrostomy feeds are some of the options. With newer advances, percutaneous endoscopic gastrostomy has become a relatively easier modality with fewer complications for establishing enteral feeds in these infants.

More than 4 million people are infected with HIV in India. It has emerged as a major global health problem. More than 3/4th cases of HIV infection in pediatric age group are due to perinatal transmission. The risk of perinatal transmission without any treatment is as high as 35-40%. Preventive strategies have been able to reduce the incidence of this mode of transmission. With availability of antiretroviral drugs this risk can be reduced by more than 50%.

I hope this issue will help our readers to update their knowledge about the advances in neonatal intensive care in developing India and will be immense benefit to those who are actively involved in newborn care.

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