Slide 1:

Friends, today we shall learn how, managing respiratory distress optimally helps prevent Retinopathy of prematurity.

Slide 2:

We will primarily focus on How management of RD affects development of ROP and then how to prevent ROP by optimal management of respiratory distress.

Slide 3:

Let us understand the potential areas where inappropriate management of a neonate with respiratory

distress places the neonate at a higher risk for developing ROP.

At birth, during resuscitation if the baby receives oxygen which is not monitored using a pulse oximeter or if the baby is given unblended 100% oxygen, he is exposed to more oxygen than required and hence is at risk of Retinopathy of prematurity.

During transport of the baby to a centre different from the place of birth if the baby becomes hypothermic or he is hypoxic or fluctuates between hypoxia and hyperoxia, this affects the retinal vascularity, predisposing the infant to reperfusion injury and places him at a higher risk of developing ROP.

In the neonatal care unit, if the baby receives oxygen which is unmonitored or the baby remains hyperoxic while on oxygen therapy, he is at risk to develop ROP.

It needs to be understood that babies who remain hypoxic and then become hyperoxic tend to have severe damage to the vulnerable retinal vasculature.

It goes without saying that if surfactant or respiratory support in the form of CPAP or Mechanical ventilation are suboptimal or instituted late then the baby continues to be exposed to higher oxygen and is more liable to develop ROP.

Slide 4:

Lets now focus on how to mitigate the ill effects of issues discussed previously.

At birth if the baby requires oxygen then it has to be blended oxygen and the neonate must be monitored using a pulse oximeter to ensure that minute specific saturation targets are not exceeded in the initial few minutes.

Thereafter, if the neonate requires oxygen, it should be ensured that the baby is neither hypoxic nor hypersaturating with the oxygen saturation being maintained in the normal range of 90 to 95%.

During transport, it will be ideal that the baby's temperature is maintained either over a warming mattress or preferably in skin to skin contact.

The neonate should receive adequate amount of fluids or feeds depending on the clinical condition and saturation is maintained between 90 to 95%.

Slide 5:

To prevent ROP it is imperative that all babies on respiratory support including those on oxygen therapy have their oxygenation monitored continuously using a pulse oximeter.

The saturation targets should be set and the alarms respected to ensure saturation between 90 and 95%.

For the neonates requiring surfactant and respiratory support, it must be ensured that total duration of ventilation, days on oxygen as well as episodes of hyperoxia and hypoxia are minimized.

It is very important that while the neonate is being managed for his respiratory ailment he should not get infected during his stay in the unit which really means that the asepsis should be meticulously maintained.

Any neonate with infection should be appropriately and adequately treated. All these measures together will certainly help to reduce the incidence and severity of ROP, if not completely prevent it.

Slide 6:

So to summarize, optimal management of respiratory distress using CPAP and surfactant early and appropriately along with meticulous oxygen therapy using blended oxygen and monitoring of oxygenation by pulse oximeters helps to reduces ROP