CHARACTERISTICS OF CHRONIC LUNG DISEASE AMONG PREMATURE INFANTS ON HOME OXYGEN

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Aim Main goal of this study was to examine the clinical characteristics of chronic lung disease (CLD) among premature infants on home oxygen.

Methods Medical records of 28 premature infants on home oxygen (mean = 6.8±4.6 months) were examined retrospectively. All infants were diagnosed with CLD. Data including demographic information, duration of ventilation, home oxygen and medication were collected.

Results All eligible infants (17/28 (60%) are males and 15/28 (53%) are white Caucasians) were born under 30 weeks of gestation (range from 23 weeks to 29±6 weeks). Of these, 22/28 (79%) infants had a birth weight of < 900 grams (range from 500 grams to 599 grams). 13/28 (46%) and 14/28 (50%, %) infants had one and two dose of surfactant respectively at birth. All infants were ventilated for a mean period of 22.9 days (range from 1 to 91 days) and they received home oxygen for a mean period of 6.8 months (range 1 to 18 months). 1/28 (3.5%) infant had persistent FDA on discharge. Mothers of 22/28 (78%) infants had received two doses of steroid prior to delivery.

Conclusion Our findings showed that duration of home oxygen was not significantly related to gestational age or birth weight. We found no significant association between the length of mechanical ventilation and the period of home oxygen. Conversely, length of mechanical ventilation was related to both gestational age and birth weight.

CAN 670NM RED LIGHT PROTECT AGAINST RETINOPATHY OF PREMATURITY AND REDUCE LUNG INJURY IN A NEONATAL ANIMAL MODEL?

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Background Retinopathy of prematurity is a vasoproliferative disorder that can cause blindness and adverse visual outcomes in extremely premature neonates. Red light at 670nm wavelength promotes cellular differentiation, proliferation and wound repair.

Aims To determine whether 670nm light promotes normal retinal vessel development in a mouse model of Oxygen Induced Retinopathy of Prematurity (OIR) and whether it would affect organ development and growth.

Methods Four groups of C57BL/6J mice were used: 1) Control; 2) OIR - 75% oxygen p7–12 days and normoxia p12–17 days; 3) OIR and 670nm light - 9 /cm 2 daily from p7–17; 4) 670nm light - 9 /cm 2 daily from p7–17. At p17 animals were sacrificed and retinal vasculature labelled with Lectin. Neovascularisation and vaso-obliteration were analysed using established protocols. Weight and length measurements were taken daily until the animals were sacrificed and all organs were harvested, weighed and examined macro- and microscopically.

Results Neovascularisation was significantly reduced in the 670nm treated OIR group (P<0.05). The 670nm treated mice had increased body weight from p13 but no change in length. The OIR+670nm mice had reduced alveolar haemorrhage in comparison to the OIR only mice (p<0.05).

Conclusions Exposure to 670nm red light appears to promote normal retinal vessel development and may protect against ROP. 670nm treatment may also oxygen induce lung injury.