EXPERIENCE WITH USING 30% O₂ TO RESUSCITATE PREMATURE INFANTS

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Background: Studies have shown that resuscitation of term infants using 21%O₂ is as safe as 100% O₂ and may be advantageous. There is a paucity of information available on the use of oxygen to resuscitate preterm infants. At Canberra Hospital, preterm infants have been resuscitated with 30% O₂ and then targeted to SaO₂ since 2004.

The aim of this study is to assess short-term outcomes of using less than 100% O₂ for the resuscitation of preterm infants.

Method: Observational cohort study of 139 premature infants (24⁺⁰ to 31⁺⁶ weeks gestation). The control group comprises infants born in 2001-2003 resuscitated with 100% O₂; the study group comprises infants born in 2005-2007 resuscitated with 30% O₂ adjusted to reach SaO₂ of 90% by 5 minutes. Main outcome measures: perinatal data (Apgar scores, duration of resuscitation) postnatal data (O₂ and SaO₂ on admission to NICU and at one hour; PaO₂ at one hour), duration of respiratory support, chronic lung disease, necrotising enterocolitis, retinopathy of prematurity, IVH and mortality

Results: There was no difference between the groups in perinatal outcomes or SaO₂. The O₂ after admission to the NICU and the O₂ and PaO₂ at one hour were all significantly lower in study group. There were no differences in ongoing respiratory support requirements, disease states or mortality.

Conclusions: Using 30% O₂ to commence resuscitation, and to then target O₂ requirement to SaO₂, seems as safe as 100% O₂ for the resuscitation of premature infants.