
**Objective**

To assess whether an oxygen saturation (Spo2) target of 85%-89% compared with 91%-95% reduced the incidence of the composite outcome of death or major disability at 2 years of age in infants born at <28 weeks' gestation.

**Study Design**

A total 340 infants were randomized to a lower or higher target from <24 hours of age until 36 weeks' gestational age. Blinding was achieved by targeting a displayed Spo2 of 88%-92% using a saturation monitor offset by ±3% within the range 85%-95%. True saturations were displayed outside this range. Follow-up at 2 years' corrected age was by pediatric examination and formal neurodevelopmental assessment. Major disability was gross motor disability, cognitive or language delay, severe hearing loss, or blindness.

**Results**

The primary outcome was known for 335 infants with 33 using surrogate language information. Targeting a lower compared with a higher Spo2 target range had no significant effect on the rate of death or major disability at 2 years' corrected age (65/167 [38.9%] vs 76/168 [45.2%]; relative risk 1.15, 95% CI 0.90-1.47) or any secondary outcomes. Death occurred in 25 (14.7%) and 27 (15.9%) of those randomized to the lower and higher target, respectively, and blindness in 0% and 0.7%.

**Conclusions**

Although there was no benefit or harm from targeting a lower compared with a higher saturation in this trial, further information will become available from the prospectively planned meta-analysis of this and 4 other trials comprising a total of nearly 5000 infants.