MedicalXpress

Lower oxygen saturation levels increase risk of death in extremely preterm infants

February 10 2016

The risk of death by age two among infants born before 28 weeks' gestation is up to 45 per cent higher when they receive targeted oxygen saturation in the range of 85-89 per cent compared to 91-95 per cent, according to a paper published today in the *New England Journal of Medicine*.

Conducted in Australia and the UK by the BOOST-II Collaborative Groups, the trial involved 2,108 cases and confirms similar findings from a randomised controlled trial in North America.

Prior to these findings, neonatologists had targeted hemoglobin saturations between 85 per cent and 95 per cent because saturations lower than 85 per cent increased the likelihood of neurologic damage and those higher than 95 per cent increased the risk of retinopathy in extremely pre-term infants.

"This evidence will help prevent thousands of deaths worldwide each year," said the University of Sydney's Professor William Tarnow-Mordi, co-principal investigator of the study. "Now more trials are urgently needed to improve the quality of survival of premature babies. With innovative investment in clinical trial networks and point-of-care data capture, trials like these could be completed much faster, at a fraction of the cost."

Using revised oximeters, a post-hoc analysis of combined data from the UK and Australian centres revealed that deaths were significantly higher

in the lower-oxygen target group than in the higher-target group: 144/587 (24.6%) versus 99/586 (16.8 %), RR 1.45, 95% CI 1.15-1.82; P=0.001.

In post-hoc combined analyses using all oximeters, deaths were significantly higher in the lower-oxygen target group than in the higher-target group: 222/1045 (21.2%) versus 185/1045 (17.8%), RR 1.20, 95% CI 1.01-1.43; P=0.04).

The success of trials like these depends on hundreds of parents and health professionals," said Professor Tarnow-Mordi. "Thanks to their support, the outlook for very preterm babies has never been better - and continues to improve."

Provided by University of Sydney