NEURODEVELOPMENTAL AND RESPIRATORY OUTCOMES AT 2 YEARS OF AGE IN PRETERM INFANTS TREATED WITH INHALED NITRIC OXIDE: THE EUNO TRIAL FOLLOW UP

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Background and aims: The EUNO trial of inhaled nitric oxide (iNO) for the prevention of BPD showed similar frequencies for the primary outcome (survival without BPD at 36 weeks postmenstrual age (PMA): iNO 65.3%; placebo 65.5%). In this paper, we present post-discharge outcomes including survival free of neurodevelopmental impairment (NDI) and respiratory outcome at 2 years corrected age.

Methods: Babies < 29 weeks of gestation with moderate respiratory failure in the first 24 hours after birth were randomly allocated iNO 5 ppm for 7 to 21 days or placebo gas. All babies were followed up at 1 and 2 years of corrected age. Year 2 evaluation included assessments of neuro-development (Bayley-3 cognitive subscale), somatic growth, use of oxygen and respiratory medications, and the number and duration of re-hospitalizations. NDI was defined as a cognitive score of < 85, non-ambulant cerebral palsy, blindness or deafness.

Results: Of 800 babies entered into the trial, 696 were alive at 36 weeks PMA; 661 (95.0%) were seen at 1 year and 630 (90.5%) at 2 years. No significant differences were found across all assessed variables. Compared to placebo, 67.2% of infants receiving iNO survived free of NDI (versus 72.4%; RR: 0.93 (95%CI: 0.84,1.02)) and 14.4% were prescribed inhaled steroids compared to 18.8% (RR: 0.76 (95%CI: 0.54-1.09)).

Conclusions: Inhaled NO at 5 ppm for 7-21 days did not affect the overall rate of neurologic, developmental or respiratory disability at 2 years. Follow up at school age is ongoing.