

FIT TO FLY? PREDICTING THE NEED FOR INFLIGHT OXYGEN IN AT RISK INFANTS

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Introduction: Assessing the need for supplemental in-flight oxygen (IF-O₂) is routinely performed using a hypoxia test. Infants considered at risk of significant hypoxia at altitude are tested prior to flying to investigate, in the safety of the laboratory, any potential decrease in SaO₂, when exposed to 14% oxygen. This assists physicians on the need to prescribe IF-O₂.

Aims: Review Princess Margaret Hospital for Children medical records of children referred between January 2000 to December 2003 for hypoxia testing. We wished to ascertain whether clinical factors could be used as predictors of IF-O₂.

Methods: Inflight O₂ was indicated if SaO₂ <85% during the 20 minute period the infant was breathing 14% O₂. Data were analysed in terms of infants' requirement for IF-O₂ and included baseline SaO₂, time off O₂, weight and neonatal factors.

Results: Forty-seven infants were referred to the Respiratory Function Laboratory between January 2000 and December 2003 for hypoxia testing. None of the infants were receiving supplemental O₂ (sO₂) at the time of testing. Twenty-six infants were discharged from the NICU off O₂, the remaining 15 having received O₂ at home for varying periods. Nine of 47 infants passed the hypoxia test and did not require IF-O₂. Requirement for IF-O₂ was predicted by days off O₂, post-menstrual age and inpatient requirement for O₂ ($R^2 = 0.48$ $p < 0.001$). Infants < 12 months corrected age were significantly more likely to fail the hypoxia test compared to those infants >12 months corrected. (36/40 vs. 2/7; $p < 0.001$, respectively).

Discussion: Infants less than 12 months corrected age with a neonatal history of sO₂ are very likely to demonstrate significant desaturations (SaO₂ <85%) when undergoing a hypoxia test. Therefore fitness to fly testing is indicated in these infants. Infants older than 12 months corrected are less likely to fail the hypoxia test and other factors such as number of days off oxygen, and inpatient requirement for O₂ may predict which of these infants should undergo testing prior to flying.

Keywords: hypoxia test, infants, flying, chronic lung disease.