HIF-Stabilization and the Prevention of Hyperoxia-Induced Neonatal Lung Disease

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Hypoxia-inducible factors (HIFs) are transcription factors that modulate cellular adaptation to hypoxia. Premature birth and high supplemental oxygen levels lead to HIF degradation, and as a consequence, to damaged lung tissue.

Background: Over 500,000 babies are born prematurely in the US each year, of which, 5,000-10,000 develop chronic lung disease (CLD). Oxygen supplementation is a necessary and life-sustaining measure in severely preterm infants. However, oxygen toxicity is a major associated risk factor for CLD, especially for newborns that require supplemental oxygen for at least 28 days after birth. The cost of treating infants with CLD in the US is estimated to be $2.4 billion annually, second only to the cost of treating asthma.

Summary: Stabilizing HIF with the help of the drug Roxadustat can prevent the onset of hyperoxia-induced neonatal chronic lung disease in pre-term infants.