

Hyperoxia may depress breathing in newborns

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Assessing whether repeated hyperoxia inhibits breathing in newborn mice.

Resuscitation strategies for premature infants may need to be revised, say researchers, after finding that repeated oxygen (O₂) administration depresses breathing in newborn mice.

"The inhibitory effects of hyperoxia on breathing may compromise oxygenation after O₂ administration, particularly in pre-term humans, who are more susceptible to apneas," the scientists propose.

To test this idea, F Lofaso from Hôpital Raymond Poincaré in Garches, France, and colleagues investigated the effects of repeated hyperoxia on the breathing response of newborn mice. Each hyperoxia trial was 3 minutes in duration and consisted of 100 percent O₂.

Repeated hyperoxia slowed the mice's breathing, with a significant decline in minute ventilation (V_E). Furthermore, hyperoxia was associated with a longer duration of apnea.

Fortunately, the investigators also discovered that these effects disappeared within 3 minutes of breathing regular air, with a reversal of the V_E decline.

However, the limitations of flow barometric measurements in newborn mice should be considered when interpreting these results, Lofaso et al caution.

Nevertheless, the findings support "a need for stringent control of oxygen therapy, most notably repeated oxygen administration in the neonatal period for premature infants and those carried to term," they conclude.

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