

Recurrent Apnea in a Neonate Following Intranasal Oxymetazoline

Medication errors in the neonatal intensive care unit (NICU) are an important cause of preventable morbidity [1]. Oxymetazoline nasal drops are commonly available and used for relief of nasal congestion and stuffiness. Despite their many described adverse effects and contraindications for use in children aged below 6 years, inadvertent use is common, and may result in undesirable and sometimes life-threatening adverse effects. We report apnea in a late preterm neonate following the inadvertent use of oxymetazoline nasal drops in the NICU.

A 34 week, 1600 g, small-for-gestational age male neonate was born by caesarean section for severe pre-eclampsia to a primigravida mother. She had an uneventful antenatal course and received a complete course of antenatal steroids. After a normal transition, the neonate was shifted to the NICU and fed on expressed breast milk by *paladai*. The neonate was eutermic, euglycemic and stable in room air. Around 60 hours of life, the neonate had an episode of apnea requiring tactile stimulation. Evaluation for secondary causes was negative and in view of suspected early-onset sepsis, intravenous antibiotics were started. There were two more episodes of apnea requiring tactile stimulation over the next two days. A retrospective drug chart review revealed the use of oxymetazoline nose drops (for nose block) by the nurse on night duty, 30 min preceding the apnea, on each occasion. This was stopped, and there was no recurrence of apnea, and the neonate remained stable in room air thereafter. Antibiotics were stopped after three days as the clinical course was not consistent with sepsis and the blood culture was sterile.

Oxymetazoline is a direct-acting sympathomimetic which has a vasoconstrictor effect on mucosal blood vessels when applied topically and in turn reduces edema of the nasal mucosa [2]. Neurological side effects in older children include states of anxiety or excitement and visual hallucinations [3]. In neonates and infants, gasping for breath, hypothermia, impaired consciousness, and bradycardia have been described [4]. These effects are mediated by stimulation of central α_2 -adrenoreceptors in the locus coeruleus and the rostral ventrolateral medulla. Neonates, whose blood brain barrier is not fully developed, are possibly more sensitive to the central side effects of the imidazolines.

This case highlights the risks of inadvertent medication use in the NICU and the need to be vigilant and train all healthcare providers to avoid medication errors.

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