The Role of Caffeine and Doxapram for Respiratory Care in Preterm Infants: A Clinical Review

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This review describes the clinical role of caffeine and doxapram as respiratory stimulants for preterm infants. Based on the current evidence caffeine citrate is the preferred drug for treatment of apnea of prematurity (AOP) and for the prevention of post-extubation respiratory failure in preterm infants. It has favorable short-and long-term effects including a reduced incidence of patient ductus arteriosus, bronchopulmonary dysplasia and improvements in neurodevelopmental outcome. Caffeine citrate is safe with currently recommended dosing, but further studies are warranted regarding the safety of caffeine when used immediately after birth and with high-dosing regimens. Doxapram has also been shown to be effective in the treatment of AOP and to reduce the need for intubation. Because of concerns about serious side effects it was less frequently used in the past. Despite encouraging results from recent studies, based on the limited number of large, randomized, controlled studies, doxapram is still not recommended for routine respiratory support in the NICU. It is a third-line or rescue therapy for preterm infants with severe AOP unresponsive to caffeine and NIV.

compared to MX. It is mainly reserved as rescue-therapy if caffeine and NIV are not successful [10]. There is still a wide variety related to timing and dosage of these pharmacological therapies. The purpose of this clinical review is to evaluate the role of caffeine

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