

Abstract

Comparison of Low-Dose and High Doses of Vitamin A in the Prevention of Bronchopulmonary Dysplasia in Premature Newborn Infants

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Background: Bronchopulmonary dysplasia (BPD) remains one of the most serious challenges in the care of the very preterm infants, affecting approximately one-quarter of infants born < 1500g birth weight and 30% of infants < 1000g. Oxygen toxicity may contribute to its pathogenesis. Vitamin A concentrations are lower in infants with BPD which may result in a reduction of the antioxidant protection. Vitamin A is involved in the regulation of lung growth, alveolar septation, surfactant production, and supports the integrity and repair of respiratory epithelium after injury. Very low birth weight (VLBW) infants often have low serum or plasma concentrations of vitamin A identified as a risk factor for the development of BPD.

Objectives: The study was done to compare Low-Dose and High Doses of Vitamin A in the Prevention of Bronchopulmonary Dysplasia in Premature Newborn Infants

Method and materials: Extremely low birth weight neonates (n=120) were randomly assigned to low and high dose regimens. Low regimen received 1500 IU 3 times per week for 4 weeks and in high dose group 5000 IU 3 times per week for 4 weeks.

Except vitamin A dosage, routine NICU medical orders were the same in all patients. The main outcome was requiring supplemental oxygen after birth. Dependence on oxygen by Fio₂ was detected to determine the severity of BPD. Infants who were born at less than 32 weeks gestational age reviewed in the 36 weeks and neonates with gestational age above 32 weeks reviewed in 56 days or when they were discharged. Trans fontanel sonography was done to determine

IVH in all infants. The two groups of infants were also reviewed about ROP and pneumothorax.

Results: In our study, 120 very low birth weight preterm infants with were studied 58 cases (48/3%) were males and 62 cases (51/7%) were female. There was no significant relationship between the dose of vitamin A and oxygen dependency in the two groups. No significant difference was observed between the two groups in the rate of IVH and ROP. There was significant difference in the need for mechanical ventilation and pneumothorax in two groups ($p=0.025$, $p=0.014$).

Conclusion: The vitamin A is prescribed in premature infants at risk for BPD. Although these drugs can cause side effects, but if you need neonatal respiratory support accessories prescribed these drugs can be very helpful and beneficial. In our study, high doses of vitamin A and low incidence of BPD was no increase in the number.

Key words: Broncho Pulmonary Dysplasia, Low birth weight Infants, Vitamin A

