

C 845103 : MAJOR PEDIATRICS

KEY WORD : IDIOPATHIC APNEA OF PREMATURITY, LOW DOSE THEOPHYLLINE

PARICHAWAN CHANDARASIRI : TREATMENT OF IDIOPATHIC APNEA OF PREMATURITY WITH LOW DOSE THEOPHYLLINE. THESIS ADVISOR : ASSO. PROF. PIMOLRAT THAITHUMYANON, MD. 28 pp. ISBN 974-636-783-8.

OBJECTIVE. To study the effectiveness of low dose intravenous theophylline treatment in premature infants with idiopathic apnea of prematurity.

DESIGN. Experimental study.

SETTING. Neonatal unit at chulalongkorn hospital, Bangkok, Thailand.

PATIENTS. 8 premature infants (birth weights range from 900-1570 gm. ; gestational ages range from 28-30 wk.) with the diagnosis of apnea of prematurity who had the frequency of apnea more than or equal to 4 times in 3 hrs. prior to study period.

INTERVENTION. All infants received loading dose of theophylline 2.5 mg/kg intravenously following with maintenance dose of theophylline 1 mg/kg every 8 hrs. Respiratory rate, heart rate and peripheral oxygen saturation were continuously monitoring by using System VIVIS™ Infant Monitoring (Airshield Vickers Medical) for 72 hrs. after initial treatment.

MAIN OUTCOME MEASURES. Apneic rate, theophylline level at 24, 48 and 72 hrs. before the next dose of theophylline, side effect of theophylline (tachycardia , hyperglycemia , vomiting, jitteriness, convulsion)

RESULT. Rate of apneic attack begins to subside within 24 hrs. after treatment in 6 infants. After 48 hrs., the apneic rate is decreased significantly ($p=0.049$). Although the apneic rate does not decreased in 2 infants at 24 hrs. but the severity of apnea is decreased. It is found that serum theophylline levels of these 2 infants are less than 6.5 mcg/mL (4.57, 6.48 mcg/mL) which are lower than the others. Serum theophylline level is gradually increased but does not reach the steady state by 72 hrs. The mean level and standard deviation at 24, 48 and 72 hrs. Are 7.66 (2.00), 10.68 (1.92) and 11.81 (1.54) mcg/mL respectively. There is no side effect of theophylline noted during the study.

CONCLUSION. Low dose intravenous theophylline treatment seems to be suitable for the management of idiopathic apnea of prematurity. It gives a satisfactory result without side effect.

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