

TITLE: Rectal Methohexital Premedication in Children: A Dose Comparison Study

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Rectally administered methohexital has been the major agent used for preanesthetic sedation in children at the Massachusetts General Hospital. It possesses most of the advantages of an intravenous induction and in addition eliminates the pain associated with parenteral drug administration. Separation anxiety for both the parents and the child is decreased to a minimum since the drug may be administered in the presence of the parents and the child allowed to fall asleep before being taken away from them. With this technique a smooth atraumatic induction of anesthesia may be accomplished.

Previous studies^{1,2} have not clearly established the time it takes for the onset of sleep after different doses of methohexital are administered rectally. The dose of methohexital employed at our institution has ranged from 10 mg/kg to 50 mg/kg, averaging between 20 mg/kg and 30 mg/kg. This study was undertaken to evaluate the sedative effect of three commonly used doses of rectally administered methohexital in healthy children.

METHODS: Eighty ASA Class I children between the ages of 11 months and 7 years who were scheduled for elective surgical procedures were studied. None of the patients had preoperative bowel preps. Except for a few who were on antibiotics, they were on no drugs. The patients were divided into three groups. Group I received 20 mg/kg of 10% methohexital. Group II received 25 mg/kg of 10% methohexital. Group III received 30 mg/kg of 10% methohexital. The time it took for each patient to fall asleep after methohexital administration was recorded. Sleep was defined as lack of awareness, non-responsiveness to verbal stimulation, and absence of voluntary and purposeful movements when unstimulated. If the patient was awake at 15 minutes, the dose of methohexital was judged to be inadequate for sleep.

RESULTS:

TABLE ONE

	Group		
	I	II	III
No. of patients	22	38	20
Dose (mg/kg)	20	25	30
Sleep time (min)	7.7±0.4	7.2±0.5	6.8±0.3
No. asleep (15 min)	20	32	19

Among the three groups, there was no significant difference in the sleep time or in the number of patients asleep at 15 minutes. No significant change in blood pressure or pulse occurred in the patients after the sleep state was achieved. None of the patients studied experienced apnea or respiratory difficulties. 13% of all patients defecated after the administration of the drug.

DISCUSSION: The lack of a significant difference between the three groups in terms of sleep time and the number of patients asleep within 15 minutes after receiving methohexital rectally indicates that 20 mg/kg should be used for routine preoperative sedation in normal healthy children. Lower doses have been reported to be inadequate for sedation.² Higher doses may be given to patients who have a higher than normal tolerance to the drug or in cases where one wishes to achieve a higher degree of basal anesthesia.

REFERENCES:

1. Budd DC, Dornette WHL, Wright JF: Methohexital for rectal basal narcosis. *Anesth Analg (Cleve)* 44: 222, 1965.
2. Orallo MO, Eather KF: Sodium Methohexital as a Rectal Agent in Pediatric Anesthesia. *Anesth Analg (Cleve)* 44:97, 1965.