44360 - CO-ADMINISTRATION OF PROPOFOL AND REMIFENTANIL FOR LUMBAR PUNCTURE IN CHILDREN

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INTRODUCTION: Co-administration of propofol and remifentanyl may be particularly suitable for procedures of short duration in pediatric patients^{1;2}. A previous study from our institution determined the ED₉₅ dose of remifentanyl, when co-administered with propofol, required to provide effective anesthesia for children undergoing lumbar puncture. When co-administered with propofol 2.0 mg/kg and 4.0 mg/kg, the ED₉₅ dose of remifentanyl was 1.5 µg/kg and 0.5 µg/kg, respectively. The purpose of this study is to compare intraoperative and recovery characteristics after propofol 2.0 mg/kg or 4.0 mg/kg and the corresponding ED₉₅ dose of remifentanyl.

METHODS: With REB approval, 19 unpremedicated children aged 4-12 years undergoing elective lumbar puncture have been studied to date. No topical anesthetic cream was applied to the skin over the lumbar region. Patients were randomly assigned to receive propofol 2.0 mg/kg + remifentanyl 1.5 µg/kg (group P2) or propofol 4.0 mg/kg + remifentanyl 0.5 µg/kg (group P4). The lumbar puncture needle was introduced at 90 seconds after remifentanyl administration. If movement occurred during the procedure an additional bolus of propofol 0.5 mg/kg was given. Intra- and postoperative vital signs, duration of procedure, duration of apnea, episodes of bradycardia or hypotension, time to awakening and first oral intake were recorded.

RESULTS: Patient age, weight, and duration of procedure were similar in the two groups. Intraoperative vital signs are shown in the table. There were no episodes of bradycardia or hypotension in either group. The duration of apnea was 73 ± 71 s in group P2 and 41 ± 33 s in group P4. The time to awakening was 12 ± 8 min in group P2 and 20 ± 13 min in group P4. There were no significant differences in recovery room vital signs within or between groups.

DISCUSSION: Preliminary data suggest that as the propofol dose is decreased and the remifentanyl dose is increased there is a trend to a longer duration of apnea, lower intraoperative heart rate and mean arterial pressure, and a shorter recovery time.

REFERENCES: 1. Anesthesiology 2004; 100: 1382-6. 2. Paediatr Anaesth 2001; 11: 297-301.

		Control	1 min	2 min	3 min	4 min
	Heart rate (bpm)	97 ± 10	80 ± 13*	80 ± 12*#	80 ± 8*#	80 ± 10*
Group P2	Resp rate (breaths /min)	22 ± 2	8 ± 8*	8 ± 9*	13 ± 7*	15 ± 8
	Mean arterial pressure (mmHg)	74 ± 7	71 ± 13	61 ± 13*	54 ± 7*	51 ± 5*
	Heart rate (bpm)	100 ± 8	93 ± 17	94 ± 16	93 ± 13	93 ± 7
Group P4	Resp rate (breaths/min)	21 ± 2	7 ± 7 *	14 ± 3 *	16 ± 5	16 ± 2
	Mean arterial pressure (mmHg)	78 ± 10	74 ± 12	67 ± 15	63 ± 8 *	62 ± 5

Data are mean ± SD

* P < 0.05 vs. Control

P < 0.05 vs. Group P4