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TITLE: RECOVERY AND DISCHARGE AFTER LONG PROPOFOL INFUSION VS ISOFLURANE ANESTHESIA FOR AMBULATORY SURGERY

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Introduction: General anesthesia with propofol-infusion has gained wide popularity in ambulatory surgery because propofol provides fast recovery and allows early discharge of patients home.¹ However, experience with inpatient surgery has indicated that when propofol infusions are used for longer lasting surgery the rapidity of recovery after propofol anesthesia is similar to recovery from inhaled anesthetics.² We tested the hypothesis that recovery is faster and patients can be discharged home earlier after long propofol-infusion when compared to isoflurane anesthesia in ambulatory surgery.

Methods: The study was carried out in 50 patients undergoing outpatient oral surgery and/or restorative dentistry under general anesthesia. The study protocol was approved by the ethical committee of the hospital and informed consent was obtained from every patient for the study. No premedication was used. Diclofenac 75 mg and vecuronium 0.01 mg/kg were given iv before induction of anesthesia with propofol 2.5 mg/kg. Succinylcholine 1mg/kg was used to facilitate oral endotracheal intubation. Anesthesia was maintained in random order either with propofol-infusion (6-12 mg/kg/h) or isoflurane (average end-tidal concentration 1.3%), both with nitrous oxide and oxygen (30%). Recovery and home readiness (=tolerated oral fluids, voided, able to walk on a straight line) was assessed using clinical criteria. Kruskal-Wallis analysis of variance was used for statistical comparison between the groups.

Results: Characteristics (means \pm SD) of patients and main results are listed in Table 1.

Parameter	Propofol	Isoflurane
Number of patients	25	25
Age (yr)	30 \pm 7.2	32 \pm 8.7
Duration of Anesthesia(min)	185 \pm 75	186 \pm 71
Orientated(min)	11 \pm 5.5*	16 \pm 7.5
Voided (min)	66 \pm 12*	86 \pm 26
Emesis(# pts) at 0-60min**		
None	25	15
Nausea	0	4
Vomiting	0	6
Emesis(# pts) at 0-24h*		
None	23	12
Nausea/Vomiting	2	13
Gait(#pts) at 30 min*		
Straight	3	0
Unsteady	21	17
Unable to walk	1	8
Gait(#pts) at 60 min*		
Straight	25	14
Unsteady/Unable	0	11
Discharged Home(min)	80 \pm 14*	102 \pm 32

* = $p < 0.01$ and ** = $p < 0.001$ vs isoflurane
min= minutes from discontinuation of nitrous oxide

Discussion and Conclusions: Propofol infusion provided faster recovery, less nausea and vomiting and allowed faster discharge home when compared to comparable long isoflurane anesthesia. Even if there is no major difference in recovery between propofol infusions and inhaled anesthetics after long inpatient surgery it appears that propofol provides faster recovery, less emesis and earlier discharge after long (2 to 4 hours) ambulatory surgery.

References:

1. Korttila et al.: Acta Anaesthesiol Scand 1990;34:400-403
2. Korttila et al. Can J Anaesth 1989;36:651-657

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TITLE: RECOVERY CHARACTERISTICS FOLLOWING PROPOFOL INDUCTION AND MAINTENANCE ANESTHESIA IN CHILDREN: A COMPARATIVE STUDY

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INTRODUCTION: Propofol, a highly lipid soluble intravenous anesthetic with short elimination half-life, produces a rapid recovery when used as an induction agent in children.¹ Its effects on recovery when used for the induction and maintenance of anesthesia in children remains to be established. This study compared the quality and rapidity of recovery following propofol induction and maintenance anesthesia to a standard anesthetic regimen in children.

METHODS: Following approval by the Human Subjects Review Committee and informed written parental consent, 47 children aged 3 to 12 years scheduled for procedures of 1 to 3 hours in duration were randomly assigned to 3 groups. In groups P/P and P/PN, anesthesia was induced with propofol 3 mg/kg and maintained with an infusion of propofol 0.10-0.30 mg/kg/min without (group P/P, n=15) or with (group P/PN, n=15) 70% nitrous oxide (N₂O). In group T/HN (n=16), anesthesia was induced with thiopentone 5 mg/kg and maintained with halothane 0.5-1.5% in 70%N₂O. In all groups, intravenous lidocaine 0.2 mg/kg was given 20 seconds before induction of anesthesia, vecuronium was used for muscle relaxation and anesthesia was titrated to vital signs. Anesthesia was discontinued at the conclusion of the procedure and recovery times were calculated from this time. A nurse blinded to the anesthetic technique in the post-anesthesia recovery (PAR) room evaluated the following variables: 1) time to extubation, eye opening, responding to commands, orientation, discharge 2) adverse events, 3) difference in times to perform a puzzle pre and post-anesthesia. The Kruskal-Wallis test, Mood Median test and Fisher's Exact test were used to identify statistically significant differences ($p < 0.05$).

RESULTS: Recovery was significantly more rapid and complete in the propofol treatment groups (table). Significantly more children in the propofol groups (10/23(43.5%)) vs T/HN 1/16 (6.3%); $p < 0.05$ performed the puzzle more quickly post-anesthesia than pre-anesthesia. There was no difference in the incidence of adverse events amongst the groups.

CONCLUSION: This study demonstrates that recovery from propofol induction and maintenance anesthesia in children is significantly more rapid with a significantly faster return of psychomotor function than a standard anesthetic regimen.

TIME TO RECOVERY(MIN)

EVENT	GROUPS		
	P/P	P/PN	T/HN
EXTUBATION	6.1 \pm 4.0	5.7 \pm 3.2	5.6 \pm 2.3
EYE OPENING	11.9 \pm 5.8	10.3 \pm 5.5*	16.7 \pm 2.3
COMMANDS	13.5 \pm 7.3	11.7 \pm 5.6	19.1 \pm 7.6
ORIENTATION	21.3 \pm 11.3*	21.5 \pm 10.0*	33.8 \pm 16.1
DISCHARGE	50.7 \pm 21.2	46.4 \pm 8.8	53.6 \pm 14.9
PUZZLE	0.16 \pm 0.31	0.002 \pm 0.21*	0.29 \pm 0.29

Data are means \pm SD, * $p < 0.05$ compared to T/HN

REFERENCES:

1. Anaesthesia, 43:593,1988.

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