A11

Title: DESFLURANE VERSUS ALFENTANYL/ NITROUS OXIDE (N20) ANESTHESIA FOR OUTPATIENT LAPAROSCOPY

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The efficacy of desflurane anesthesia (MAC 6.0 - 7.2%), alone or with N20, was compared to alfentanyl: N20 in 70 patients undergoing outpatient laparoscopy.

Methods: After obtaining institutional review board approval and individual consent, anesthesia was induced by alfentanyl, 15 ug/kg and pentothal, 5 mg/kg/iv; patients were then paralyzed by succinyl choline, 1.5 mg/kg/iv, and intubated. They were then randomly assigned to receive 1 MAC Desflurane (Group 1); 1 MAC Desflurane: 60% N20 (Group 2); alfentanyl 25 ug/kg followed by infusion at 1-2 ug/kg/min plus N20 (Group 3). Desflurane concentration or alfentanyl infusion was adjusted as needed. Recovery parameters assessed included time until oriented, taking oral fluids, walking, and fit for discharge. Performance on p-deletion and digit substitution tests, sedation scores, visual analogue pain scores (VAS), and emetic symptoms were recorded at 30 min. intervals during recovery.

Statistical Analysis: Comparison between groups was by chi square or analysis of variance with multiple range testing by Student Newman-Keuls test.

Results: Representative results are shown in Table 1. The groups were of similar age, weight, and surgical duration. There were no statistically significant differences in speed of recovery as judged by clinical criteria or by psychometric tests, except that Group 2 became oriented more slowly than Groups 1 and 3. The number of emeses/patient was greater after alfentanyl anesthesia. VAS pain scores were less in Group 1 at 90 mins ($p<.05$) but not different at 30, 60 or 120 mins. All patients recovered satisfactorily; one was admitted overnight for pain in Group 1, 2 for emetic symptoms in each of Groups 2 and 3.

Conclusions: Overall, desflurane anesthesia was characterized by stability of vital signs, ease of use, rapid emergence, and a lesser frequency of emesis.

Table 1. Summary of Results (Mean ± S.D.)

	DES	DES:N20	ALF:N20
Group #	1 (n=24)	2 (n=23)	3 (n=23)
Age (yrs)	30 (6)	28 (5)	29 (5)
Wt (kg)	65 (11)	63 (12)	67 (13)
Duration Surgery(mins)	41 (24)	44 (28)	40 (27)
Recovery speed(min)			
Orientation	3 (4)!	8 (11)**	3 (6)
Oral fluids	67 (28)	87 (45)	121 (199)
Walk	117 (71)	132 (112)	122 (79)
Discharge fit	150 (65)	158 (72)	156 (89)
% Nauseated	21	30	35
% Vomited	13	13	22
# Emeses/pt	.29 (.6)*	.48 (1)	1.1 (2)

* $p < .05$ vs Gp.3; ** $p < .02$ vs Gp. 3; ! $p < .02$ vs Gp. 2

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TITLE: A COMPARISON OF DESFLURANE WITH PROPOFOL IN OUTPATIENTS UNDERGOING PERIPHERAL ORTHOPEDIC SURGERY

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Rapid, complication-free recovery from anesthesia is desirable in ambulatory patients. The insolubility of the investigational agent desflurane seems to make it a promising agent for outpatients. We combined data from two institutions participating in a multicenter study comparing desflurane and propofol in outpatients undergoing peripheral orthopedic surgery.

Following IRB approval, 91 consenting ASA I-II patients were randomly assigned to one of four anesthetic groups (see Table 1). Baseline psychometric testing was performed. All patients received fentanyl 2 μg/kg and d-tubocurare 3 mg prior to induction. Maximum propofol infusion rate was 12 mg/kg/hr. Maximum end tidal desflurane concentration was 11%. Thereafter, anesthetic depth was increased by fentanyl boluses. Time from dressing placement to recovery was recorded by blinded observers. Pain, sedation, nausea and psychomotor performance (digit substitution, p-deletion) were assessed at 30 minute intervals. Comparisons between treatment groups were by analysis of variance, or by chi square tests. Statistical analysis demonstrated that differences in individual center data did not affect study conclusions or primary outcome variables.

Combined group demography of the two centers was similar with respect to age, weight, sex, duration of surgery and history of previous complications including nausea. Intraoperatively, Group 2 patients required fentanyl supplementation more often than Group 3. Time to emergence, discharge, sedation and pain scores and psychometric test results were similar among groups. Group 2 patients demonstrated less nausea and vomiting and the ability to sit upright sooner than Groups 1, 3 and 4.

Desflurane and propofol both appear to be suitable anesthetics for ambulatory surgery patients. In spite of requiring additional intraoperative narcotic analgesia, Group 2 patients experienced less nausea and vomiting and required antiemetic treatment less often than Groups 1, 3 and 4. Future studies are indicated to evaluate desflurane anesthesia following antiemetic prophylaxis and omission of pre- and intraoperative narcotics.

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TABLE 1. SUMMARY OF RESULTS (Mean ± SD or %)

Group	1	2	3	4
n	22	23	24	22
Induction	Prop	Prop	Des:N_2O	Des:O_2
Maintenance	Des:N_2O	Prop:N_2O	Des:N_2O	Des:O_2
Fen.supp.(%)	27.3	60.9	0*	9.1
Nausea(%)	40.9*	13.0	66.7*	54.6*
Vomiting (%)	13.6	8.7	33.3	22.7
NV Meds (%)	27.3	0	33.3	40.9*
Sitting#	87.4±63*	40.7±32.7	79.9±55.4*	96±72.2*
Discharge time#	143±41.3	129.6±26.2	147.6±62.5	160.8±63.8

times in min after entering recovery room
* .05 > p > .01 vs. Group 2