TITLE: INTRAVENOUS LIDOCAINE DOES NOT PREVENT POSTOPERATIVE VOMITING IN PEDIATRIC STRABISMUS PATIENTS

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Introduction: Postoperative vomiting is seen in 41-85% of pediatric patients following strabismus surgery. Warner [1] reported that 2 mg/kg of intravenous lidocaine reduced vomiting postoperatively to 16-20% in 2 groups of 25 each compared to their control group (n=25) with 52%. All of these patients received premedication with atropine, promethazine, and chloral hydrate p.o. This beneficial effect was not seen using 1 mg/kg of lidocaine (n = 34).[2] Lidocaine has fewer potential side effects than droperidol which is presently widely used to prevent postoperative vomiting. If lidocaine (2 mg/kg) were effective without giving Warner's premedication with promethazine, it would be at least as effective as droperidol.

Methods: Eighty-six ASA I and II children between the ages of 6 months to 13 years undergoing strabismus surgery were studied in a prospective manner. None of the children received any premedication. After induction with mask N_2O/O_2/halothane, an intravenous catheter was placed and atropine 0.015 mg/kg was administered. Prior to intubation, lidocaine 2 mg/kg intravenously was administered to group 1 (n=33).

Eighteen patients received atracurium (0.5 mg/kg) and 16 of these patients received neostigmine and atropine at the end of the procedure. All patients received 10-20 ml/kg of intravenous fluids during the procedure. None of these patients received narcotics. Ventilation was controlled for the procedure.
Stomach contents were suctioned via an orogastric tube.

Maintenance anesthesia was with N_2O/O_2/halothane. Episodes of vomiting were recorded postoperatively in the recovery room and while on the same day surgery unit prior to discharge. Antiemetics were only given to patients in the postoperative period to treat vomiting.

Students t-test and chi square analysis of the data were used to determine statistical significance.

Results: There was no statistical difference in the 2 groups with respect to age. There was no difference in postoperative vomiting in these 2 groups.

	Group 1 (lidocaine)	Group 2 (control)
n	33	53
Vomiting	14 (42%)	24 (45%)

Discussion: Lidocaine 2 mg/kg is not effective in decreasing the incidence of postoperative vomiting in pediatric strabismus patients. Patients with this anesthetic management who did not receive narcotics had a lower incidence than that reported in other studies. This incidence is as good as that of Abramowitz's group which was treated with droperidol (75 µg/kg) (43% vomited)[3].

These factors have been consistent with other investigations, age range, IV atropine, and emptying the stomach with an orogastric tube. Anticholinesterases have been shown to have no effect on postoperative vomiting in pediatric patients.[4]

Lidocaine by itself is not effective in reducing the incidence of vomiting in pediatric strabismus patients.

References:
1. Anesthesiology 68:618-621, 1988.
2. Anesthesiology 69:A749, 1988.
3. Anesthesiology 59:579-583, 1983.
4. American Academy of Pediatrics Spring Meeting, 1988, pp. 54-55.

A8

TITLE: SEDATION-ANALGESIA FOR OUTPATIENT LITHOTRIPSY: KETAMINE VS ALFENTANIL

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Extracorporeal shock wave lithotripsy (ESWL) for renal calculi is usually performed under general or regional anesthesia. However, a recent report described the use of an alfentanil infusion for gallstone lithotripsy.[1] We evaluated the safety and efficacy of alfentanil vs ketamine when administered in combination with midazolam for sedation and analgesia during immersion lithotripsy.

50 consenting ASA I-II outpatients presenting for ESWL procedures (stone size 75±50 cm^2) were randomly assigned to receive either alfentanil (A, n=23) or ketamine (K, n=27) according to an IRB-approved, double-blind protocol. Both treatment groups were sedated with midazolam 1-3 mg iv. In group A, sedation was initiated with alfentanil 10 $\mu g \cdot kg^{-1}$, followed by an infusion of 0.75 $\mu g \cdot kg^{-1} \cdot min^{-1}$. In group K, sedation was induced with ketamine, 0.4 $mg \cdot kg^{-1}$ and an infusion was started at a rate of 25 $\mu g \cdot kg^{-1} \cdot min^{-1}$. An unmodified Dornier HM3 lithotriptor was used (2000±500 shocks at 20 kv) and monitoring included blood pressure, heart rate, respiratory rate, and pulse oximetry. Physician, nurse and patient satisfaction was assessed using a questionnaire. Data were analyzed using ANOVA and Chi square tests, with $p<0.05$ considered statistically significant (means ± S.D.).

The two study groups were comparable with respect to demographic data (age 48±14 yr, weight 84±20 kg, 64% male). Midazolam premedication (2.4±0.8 mg), ESWL (31±10 min) and anesthesia times (50±12 min) were also identical for both groups. Use of ketamine (vs alfentanil) was associated with superior hemodynamic and respiratory stability (fig. 1 and 2). However, ketamine produced more perioperative side effects (table 1) and longer recovery times (60±22 vs 48±21 min). Finally, patient satisfaction was high in both groups (96% "excellent" in A vs 70% in K).

In summary, both alfentanil and ketamine are acceptable alternatives to general and regional anesthetic techniques during immersion lithotripsy in the outpatient setting.

References 1. Anesth Analg 70:299-302, 1990

Table 1: PERIOPERATIVE SIDE EFFECTS FOLLOWING ALFENTANIL (A) AND KETAMINE (K) SEDATION

	INTRAOPERATIVE (%)			POSTOPERATIVE (%)			
	RECALL	PAIN	DREAMS	NAUSEA	ITCHING	SEDATION	CONFUSION
A	45	0	5	32	23	68	5
K	12*	0	35*	50	4*	89	31*

*P<0.05

FIGURE 1

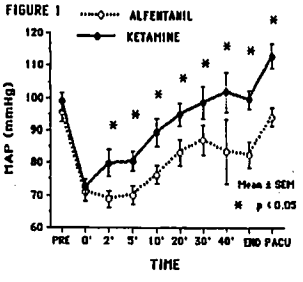
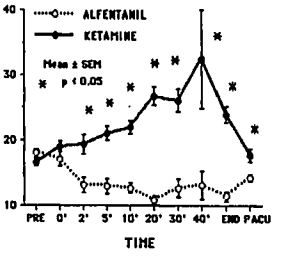


FIGURE 2



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