TITLE: EFFECTS OF ALFENTANIL ANALGESIA FOR OPHTHALMIC NERVE BLOCKS.

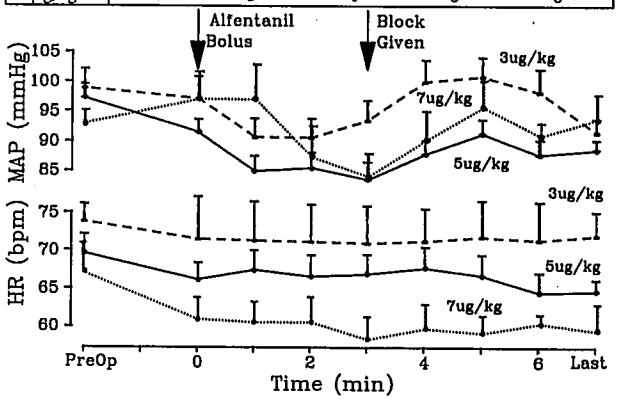
AUTHORS: S.W. Stead, M.D., K.M. Northfield, M.D.
AFFILIATION: Department of Anesthesiology, U.C.L.A. School of Medicine, Los Angeles, CA 90024.

Introduction. Ophthalmic surgical procedures are commonly performed under local anesthetic nerve block and monitored anesthesia care (MAC). Despite the relatively non-invasive nature of the surgical procedures, the performance of the local anesthetic blocks is a brief, painful stimulus associated with the release of catecholamines. Benzodiazepines and barbiturates are commonly employed during nerve blocks, both of which have potentially adverse hemodynamic effects. Alfentanil provides a very brief period of profound analgesia without loss of consciousness and exhibits excellent hemodynamic stability.[1] The efficacy and effects of alfentanil as an anesthetic adjunct for performance of ophthalmic nerve block were assessed.
Methods. ASA I-III patients undergoing surgery with MAC were randomly assigned to receive 3, 5 or 7 μg/kg alfentanil bolus prior to the performance of the local anesthetic nerve block. Anesthetic management was otherwise identical for the three dosage groups. Patients were premedicated with diazepam, 0.1 mg/kg po, rounded to the nearest mg, and received 0.625 mg droperidol iv immediately prior to the alfentanil bolus. Monitoring included ECG, mean arterial blood pressure (MAP), heart rate (HR), and pulse oximetry. O_2 was administered to all patients. The alfentanil was given in a single iv bolus dose 3 minutes prior to the nerve block. Vital signs were recorded q 1 minute from the time of alfentanil bolus until 10 minutes after the completion of the local anesthetic block. Patient response to the block was then scored (see table). Statistical tests included Analysis of Variance for repeated measures, Bonferroni modified t-test, and Pearson Chisquare; $p<0.05$ was considered significant.
Results. There was no loss of consciousness, apnea or airway obstruction in any group. Oxygen saturation remained unchanged during the study period. All patients remained cooperative during performance of the local anesthetic nerve block. Patients receiving alfentanil 7 μg/kg reported significantly less pain (Table, $p<0.005$). The starting MAP for the three groups were similar(Fig). MAP decreased following alfentanil in all doses, with 7μg/kg group showing the greatest decrease ($p<0.05$). MAP similarly increased in all groups during the nerve block. HR was unchanged in all groups throughout the study(Fig).
Discussion. This study documents the use of a single alfentanil bolus as an anesthetic adjunct during the placement of ophthalmic nerve blocks. We conclude that the administration of alfentanil in a bolus dose is an effective means of providing a brief period of profound analgesia for the performance of local anesthetic nerve blocks. In our study, the 7 μg/kg dosage of alfentanil proved advantageous, as evidenced by the lower pain score in the absence of adverse hemodynamic or respiratory effects.

1. Br J Anaesth 61(6):669-674, 1988.

Block Score

Alfentanil	Unaware	Painless	Discomfort	Painful	Severe Pain
3 μg/kg	0	1	4	6	0
5 μg/kg	0	8	6	1	0
7 μg/kg	1	5	1	0	0



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TITLE: ANALGESIC EFFECT OF EPIDURALLY ADMINISTERED SUFENTANIL DURING THORACOTOMIES: A COMPARISON WITH BUPIVACAINE AND SALINE

AUTHORS: F. Haak-van der Lely M.D., J.W. van Kleef M.D., Ph.D., B.Th. Gesink-van der Veer M.D., A.G.L. Burm Ph.D., J.G. Bovill M.D., Ph.D.
AFFILIATION: Dept of Anesthesiology, University Hospital of Leiden, Leiden, The Netherlands

Epidural sufentanil provides good postoperative analgesia[1,2], but there have been few reports of its use intraoperatively. We investigated the effect of epidural sufentanil, epidural bupivacaine with epinephrine or epidural saline on I.V. sufentanil requirements in patients undergoing thoracotomy under balanced anesthesia.

Methods. With institutional approval and informed consent, 30 patients undergoing elective thoracotomies for lung surgery were randomly assigned to one of three groups. Premedication was with temazepam 20 mg p.o. and atropine 0.5 mg I.M. Preoperatively an epidural catheter was inserted at either the T_3, T_4 or T_5 interspace. Correct positioning was confirmed by injecting 3 ml mepivacaine 2% with epinephrine (5 μg/ml).

Anesthesia was induced with sufentanil 1 μg/kg and thiopental 2-5 mg/kg. Pancuronium 0.1 mg/kg was given, and after intubation of the trachea the lungs of the patients were ventilated with 66% N_2O in O_2 and halothane 0.3% inspired concentration. Thirty min after the start of surgery either 50 μg sufentanil in 7 ml saline (group I), 8 ml bupivacaine 0.5% with epinephrine 1:200.000 (group II) or 8 ml saline (group III) were injected in a double-blind fashion via the epidural catheter. During surgery sufentanil 25 μg was given I.V. if systolic blood pressure [SBP] increased > 15 mmHg above the preoperative value, heart rate exceeded 90 beats/min in the absence of hypovolemia or when other autonomic or somatic signs occurred. A decrease in SBP > 15 mmHg was treated by I.V. fluids and/or ephedrine 5 mg I.V. Data were analysed by paired t-test and Fishers exact test. A value of $p < 0.05$ (with appropriate corrections for multiple comparisons) was considered significant. Values are reported as mean ± SD.

Results. The groups were comparable with respect to demographic data, type and duration of surgery. Four patients in group I, 1 patient in group II and all patients in group III needed I.V. sufentanil supplements. The sufentanil doses were 25 μg, 75 μg and 25-100 μg respectively. The differences between group I and III ($p < 0.005$) and groups II and III ($p < 0.0001$) were highly significant. Five patients in group I, all in group II and none in group III needed ephedrine.

Discussion. This study shows that epidural sufentanil can contribute significantly to balanced anesthesia for thoracic surgery. Although the need for supplemention with I.V. sufentanil was similar in groups I and II, epidural sufentanil resulted in significantly less hypotension than did epidural bupivacaine with epinephrine.

References
1. Anesth. Analg. 66: 999-1003, 1987.
2. Acta Anaesth. Scand. 32: 193-198, 1988.