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A711

TITLE: A COMPARATIVE STUDY OF 0.25% ROPIVACAINE AND 0.25% BUPIVACAINE FOR BRACHIAL PLEXUS ANESTHESIA.

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Introduction: Ropivacaine is a new long acting local anesthetic similar to bupivacaine but with a lower cardiotoxic potential. In human brachial plexus studies, 0.5% ropivacaine and 0.5% bupivacaine have been shown to be similar in terms of onset and duration of both sensory and motor block. The purpose of the present study was to compare the anesthetic characteristics of 0.25% ropivacaine and bupivacaine when used for brachial plexus block.

Methods: The Institutional Review Board provided approval prior to initiation of this double blind, randomized study. The study included 44 ASA I or II patients, premedicated with 0.15 mg/kg of morphine sulfate IM and midazolam 0-3.0 mg IV. Each patient received a subclavian perivascular block with 40 ml of anesthetic solution and 5 ml to block the intercostobrachial nerve in the axilla. One group (n=22) received 0.25% bupivacaine and a second group (n=22) received 0.25% ropivacaine. Sensory and motor recordings were done prior to the block and at 2,5,10,15,20,25, and 30 min following the block, then every 15 min until 5 hrs, then every 30 min until 12 hrs, and then every 60 mins until the block resolved. Data was analyzed using Chi-square, Fisher's exact, and the Wilcoxon rank sum tests, with $p<0.05$ considered statistically significant.

Results: Onset times for analgesia and anesthesia in each of the C5 through T1 dermatomes were found not to differ significantly between the bupivacaine 0.25% and ropivacaine 0.25% groups. The onset of motor block differed only for paresis at the hand, with bupivacaine demonstrating a shorter onset time than ropivacaine. The duration of motor block did not significantly differ between the groups. Although the mean duration times for sensory block appeared shorter in the ropivacaine group, these differences were not statistically significant.

The incidence of sensory block in each of the C5 through T1 dermatomes and the incidence of motor block did not differ between the groups.

Both groups had a high supplementation rate, with 9 of 22 patients in the bupivacaine group and 8 of 22 patients in the ropivacaine group requiring supplementation prior to surgery.

Discussion: Ropivacaine 0.25% produced a brachial plexus block similar in quality to bupivacaine 0.25% in terms of onset and duration of sensory block as well as the need for supplementation. Motor block was also similar between the two agents in most aspects. In comparison to previous studies done with 0.5% ropivacaine, decreasing the concentration to 0.25% increased the need for supplementation and appeared to decrease the duration of the block. In view of the high need for supplementation we noted with both 0.25% ropivacaine and 0.25% bupivacaine, we recommend using the 0.5% concentrations of these agents to provide brachial plexus block.

A712

TITLE: DOUBLE-BLIND COMPARISON OF EPIDURAL FENTANYL AND PCA MORPHINE IN POST-THORACTOMY PAIN

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The efficacy of epidural fentanyl and PCA morphine in the management of post-thoracotomy pain was compared in a prospective, randomized and double-blind study. After institutional approval and informed consent, thoracic epidural catheter was inserted preoperatively and a PCA device was connected postoperatively to 36 thoracotomy patients who were assigned to either Group I (epidural fentanyl, 10 ug/cc starting at 5 cc/hr, PCA saline; n=18) or Group II (epidural saline, PCA morphine; n=18). The group assignment was unknown to the patients, nurses and physician evaluators, who escalated both infusions according to a protocol when pain relief was deemed inadequate by the patients. Visual analog pain scores (VAS) both at rest and during coughing, verbal rating scores (VRS) of pain relief, and sedation scores were assessed every 2 hours from 0700 to 1900 for 3 days postop. Vital capacity (VC) was measured before surgery and at 24, 48 and 72 hours postop. ANOVA or repeat measures MANOVA were used to analyze interval data and non-parametric tests were used for ordinal data. Statistical significance was set at $P < 0.05$.

The 2 groups were similar in age, gender, height, weight and baseline lung function. Throughout the 72 hours after surgery, the VAS scores during coughing were consistently higher than the scores at rest in all patients. However both scores were lower for the patients in Group I ($p=0.001$)(fig 1). Better pain relief for Group I patients was also reflected by significantly higher VRS. The decrease in VC (up to 62%) and mild elevation of PaCO2 were similar for the 2 groups. Both groups had similar degrees of sedation and low incidence of nausea and vomiting but Group I had a significantly higher incidence of pruritus.

We conclude that epidural fentanyl provides better relief of post-thoracotomy pain, during both rest and coughing, than PCA morphine, but is associated with a higher incidence of pruritus. Furthermore, when assessing the efficacy of an analgesic modality, the effect of patient activity has to be considered.

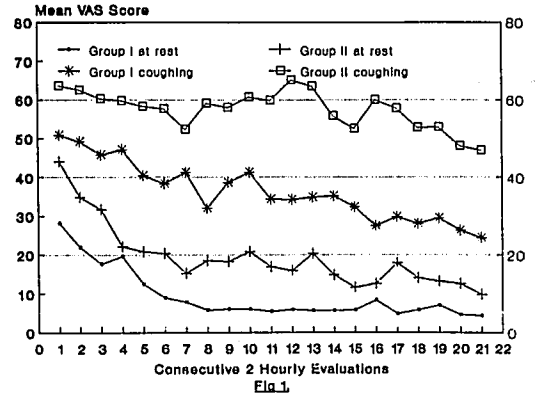

Fig 1