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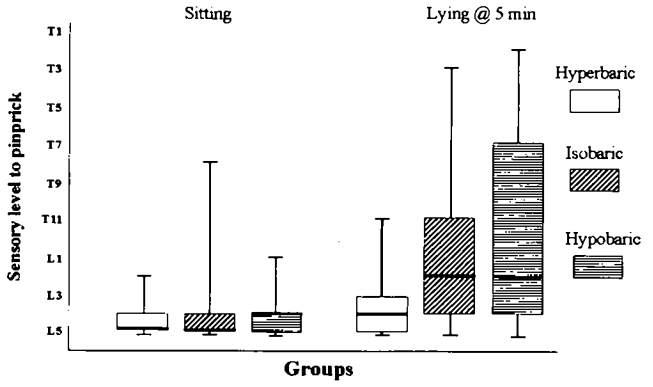
DOES DENSITY INFLUENCE THE SPREAD OF INTRATHECAL BUPIVACAINE IN THE PROLONGED SITTING POSITION BEFORE ELECTIVE CESAREAN SECTION? *Sodhi, V; Fernando, R.; Hallworth, S.; Sarang, K.; Patel, N. Dept of Anesthesia , Royal Free Hospital, London, United Kingdom* Disadvantages of the CSE technique include prolonged delays in siting the epidural catheter, which may result in inadequate spinal anesthetic spread [1]. This randomized, double-blind study tested our hypothesis that spinal solutions of varying density would behave differently under such conditions. After IRB approval, 90 women undergoing elective cesarean section under CSE were randomized into 3 groups (n=30 per group) to receive hyperbaric, isobaric or hypobaric (densities determined from a previous study [2]) bupivacaine 10 mg with fentanyl 15 mcg intrathecally, in the sitting position. Any posture related effects on density between the solutions were potentially exaggerated by keeping patients sitting for 5 min before lying in the supine wedged position. Data collection included sensory level (cold, pinprick, touch) and motor block assessment while sitting, immediately on lying down and at further 5 min intervals for 20 min, as well as the incidence of hypotensive episodes, ephedrine use and neonatal data. Statistical analysis included ANOVA, Kruskal Wallis and Cuzick's trend tests ($P<0.05$). Although sensory levels did not significantly differ between groups during 5 min of sitting ($P= 0.53$), all solutions demonstrated increased cephalad spread immediately on lying supine (see figure), with significant trends of increasing block height, hypotension and ephedrine use with decreasing spinal solution density ($P<0.0001$) over the 20 min study period. Our data suggest that during a prolonged CSE procedure, variations in bupivacaine density do not significantly affect initial intrathecal spread until adopting the supine wedged position. *1. Cook TM: Combined spinal-epidural techniques. Anaesthesia 2000; 55: 42-64 2. Hallworth SP, Fernando R, Stocks G. Predicting the density of bupivacaine & bupivacaine-opioid combinations. Anesth Analg (In Press).*



Data are median (horizontal bar), interquartile range (box) and range (whiskers)

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LOW-DOSE ROPIVACAINE VS. BUPIVACAINE FOR SPINAL ANESTHESIA FOR CESAREAN SECTION *Velickovic, I.A. Leicht, C.H. Department of Anesthesiology, The Western Pennsylvania Hospital, Pittsburgh, PA* The dosage and efficacy of spinal ropivacaine for Cesarean delivery has not been well defined. Hyperbaric ropivacaine (18mg) appears to provide adequate analgesia for cesarean section (1). The use of low-dose isobaric bupivacaine has also been reported (2). However, the use of low-dose isobaric ropivacaine for spinal anesthesia for Cesarean section has not been previously reported. The purpose of this study was to evaluate the efficacy and safety of spinal anesthesia with 0.1% isobaric ropivacaine and to compare the results obtained to 0.75% hyperbaric bupivacaine controls. A recent dose finding study (3) indicated that the ED 50 and the ED 95 of spinal ropivacaine for cesarean section to be 16.7 mg and 26.8 mg, respectively. This ongoing analysis received Institutional Review Board approval for the review of medical records of all Cesarean Section patients from the previous one-year period (2001). Data was abstracted from all pertinent records by research study coordinators and entered into a database. Patients were stratified into two groups: isobaric ropivacaine 1%, and hyperbaric bupivacaine 0.75%. Data collected included: spinal anesthetic dose, duration of procedure, adjuncts to the spinal anesthetic, intra-operative adjunctive analgesics, episodes of hypotension requiring treatment, side effects requiring treatment and duration of post-op analgesia. The data was analyzed using Chi-square, and Students T-test where appropriate, with a P value of < 0.05 considered statistically significant. Demographic data were similar in both groups. Onset time, adjunctive intraoperative analgesia, intraoperative ephedrine use, time to first request for postoperative analgesia, total postoperative analgesic requirement and side effects requiring treatment, did not differ between the two groups. This analysis showed no significant difference between low-dose isobaric ropivacaine and hyperbaric bupivacaine spinal anesthesia when combined with fentanyl and morphine for Cesarean Section. The finding that the intra-op adjunctive analgesic requirement and the time to first post-op pain medicine request did not differ between the groups was especially surprising considering the apparent large disparity between the doses of the spinal local anesthetics used. In contrast to the dose-finding study of Khaw et al. (3), our analysis shows when combined with morphine and fentanyl much lower doses of ropivacaine may be effective for anesthesia for Cesarean Section. Further study is indicated. *1) Anesth Analg 2001; 93:157-61 2) Reg Anesth Pain Med 2000; 25:235-9 3) Anesthesiology 2001; 95:1346-50*

	Intra-op ephedrine use # of patients	Adjunct intra-op analgesia # of patients	Time to first analgesic request (min)	Nausea requiring treatment # of patients	Pruritis requiring treatment # of patients
Group 1 (bupivacaine)	37% (19/51)	20% (10/51)	742+/-495	27% (14/51)	27% (14/51)
Group 2 (ropivacaine)	35% (9/26)	8% (2/26)	927+/-477	23% (6/26)	35% (9/26)