ADDITION OF EPINEPHRINE TO A COMBINATION OF BUPIVACAINE AND FENTANYL IN SPINAL ANESTHESIA FOR CESAREAN SECTION

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INTRODUCTION: The combination of local anesthetics and opioids with or without epinephrine are frequently used in regional anesthesia. However, the changes caused by any drug on the pharmacodynamic effects of the associated drug are controversial (1-4). The present study was undertaken to assess the characteristics of the anesthesia produced by the intrathecal administration of a combination of bupivacaine, fentanyl and epinephrine in patients undergoing cesarean section.

METHODS: Fifty patients were randomly divided into two groups after obtaining their written authorization to participate. The study was approved by our Committee of Ethics. All of them were pre-hydrated with 1000 ml of lactated Ringer and received spinal anesthesia in the sitting position. Fifteen mg (3 ml) of hyperbaric 0.5% bupivacaine, 0.75 µg.kg-1 of preservative free fentanyl and 200 µg (0,2 ml) of epinephrine were injected in half of the patients, while in the control group epinephrine was replaced by saline. Time to onset, highest level of anesthesia and time to regression of 2 dermatomes and to T12 of analgesia to pin-prick were measured. Time to supplemental analgesic request was used as duration of postoperative analgesia. The number of doses of analgesics and adverse side effects were noted. Neonates were evaluated by means of Apgar's test. Student's t test and Chi square were used for statistical purposes. A p value less than 0.05 was considered to be significant.

RESULTS: Epinephrine did not change the characteristics of spinal anesthesia provided by bupivacaine and fentanyl. Values registered in time to onset, highest level achieved and duration of anesthesia are shown in the Table. Duration of postoperative analgesia was longer in the treated group: 742±239 vs. 663±254 minutes (Mean±SD). Among adverse side effects recorded, pruritus was significantly more frequent in the control group.

DISCUSSION: It was expected that epinephrine would have synergist effects with fentanyl and/or prolong the duration of action of bupivacaine, acting on alfa 2 adrenoceptors or decreasing the absorption of the local anesthetic. Nevertheless, our data shows that no important clinical differences are derived from the addition of epinephrine to a combination of bupivacaine and fentanyl and that a decreased frequency of pruritus is the only positive finding.

	EPINEPHRINE	CONTROL	P
HIGHEST LEVEL (1)	5,2± 1,63	5,2± 1,88	NS
TIME TO ONSET (2)	13,2± 4,37	13,0± 3,16	NS
REGRESSION OF 2 DERMATOMES (2)	78 ±14,6	79 ±15,7	NS
REGRESSION TO T12 (2)	202 ±30,9	200 ±26,4	NS

(1) Dermatomes (2) Minutes. Results are Mean ± SD

REFERENCES: 1-Anesth Analg 1986;65:365-9. 2-Anesth Analg 1985;64:468-70. 3-Anesth Analg 1988;67:943-948. 4-Can J Anaesth 1990;37:432-7.