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Spinal anesthesia with isobaric bupivacaine for cesarean section

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Introduction: We use isobaric solution in spinal anesthesia for cesarean section to avoid rapid spread of sympatholysis and maintain blood pressure under left tilt position. The purpose of our study was to evaluate the effects of concentration (volume) and dose of isobaric bupivacaine for spinal anesthesia.

Methods: Following IRB approval, 88 parturients scheduled for cesarean section were enrolled. Exclusion criteria included: Toxemia, multiple gestations, fetal distress and morbid obesity. Isobaric bupivacaine(B) [0.25%B(10, 12.5, 15mg), 0.375% B(11.25, 15mg), 0.5%B(10, 12.5, 15mg)]was intrathecally (L3-4) administered after epidural catheterization(T12-L1) . Plain 0.5%B was diluted and prepared to isobaric 0.25% and 0.375% solution using with normal saline. Ephedrine was administered when systolic blood pressure decreased below 90mmHg or 30% decrease of controlled systolic blood pressure. Epidural injection was added for insufficiency of spinal analgesia. Time course of dermatome to pinprick, peak block height, duration of modified Bromage 3 motor block, dosage of ephedrine and request of additional epidural anesthesia. Data were analyzed using ANOVA test.

	D37	SG37/37	Baricity
0.25%B	0.9998	1.0064	0.9995
0.375%B	0.9996	1.0062	0.9993
0.5%B	0.9993	1.0059	0.9990

Results: Additional epidural anesthesia could be necessary for insufficiency of analgesia level in isobaric B10mg groups (0.25% and 0.5%). Though isobaric B15mg obtained sufficient analgesia, each individual of 0.25%B showed variant spread of analgesia. Dermatomes to pinprick analgesia in early phase were significantly lower in 0.5% B. Recovery from motor block was significantly shorter in lower dosage groups.

Conclusion: Concentration and volume as well as dosage influenced on early spread of isobaric spinal anesthesia for cesarean section. Duration of motor blockade depended on dosage in isobaric spinal anesthesia.

Reference:

- 1.Greene NM:Anesth Analg 64;715,1985
- 2.Roberts FL:Anaesthesia 44;471,1989

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