

TITLE: EPINEPHRINE TEST DOSE AND EPIDURAL MORPHINE SIDE EFFECTS

AUTHORS: E.H. Kavee M.D., E. Winter, M.D., M. Zakowski, M.D., S. Ramanathan, M.D. H. Turndorf, M.D.

AFFILIATION: Department of Anesthesiology, New York Univ Medical Center, New York, N.Y. 10016

Introduction: Previous studies have suggested that epinephrine (Epi) test dose intensifies epidural morphine (EM) side effects. This prospective, randomized study assesses whether Epi influences EM side effects.

Methods: The study protocol was approved by the review board, and informed consent was obtained. Fifty-eight cesarean section patients were assigned to 1 of 4 groups. Group 1 (n = 15) received no Epi (controls) in the test dose; group 2 (n = 15), 5 µg; group 3 (n = 14), 10 µg; and group 4 (n = 14), 15 µg. All patients received 0.5% bupivacaine for anesthesia and 5 mg of EM after delivery. After 24 hours, each patient was asked to rate nausea, itching, sweating and dizziness on a 10 cm visual analogue scale by an impartial observer. Results were expressed as mean ± 1SE. The number of patients complaining of no side effects (0 score), mild (<3), moderate (4-6) or severe (7-10) were compared among the groups with X2 analysis and severity scores using analysis of variance at p < 0.05.

Results: Each of the three epi groups did not differ from the controls in severity or frequency of mild, moderate, severe or no side effects (Table). Nor did the average severity scores for each of the side effects (Fig, only nausea and itch scores). Epi groups did not differ among themselves.

Discussion: Two studies reported increased side effects with Epi-EM combination.^{1,2} In one study, the finding was incidental

and in the other, it was observed in three non-surgical male volunteers. Our results indicate that epinephrine does not affect the frequency or the severity of EM side effects. It seems unwarranted to exclude the Epi test dose on this basis.

TABLE: FREQUENCY OF SIDE EFFECTS

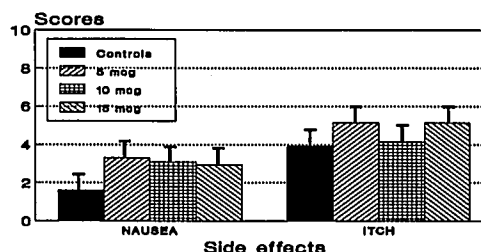
EPI(µg)	0	5	10	15
SCORES				
0	N 9 I 1	N 5 I 0	N 5 I 1	N 5 I 1
<3	11 7	8 3	9 4	8 3
4-6	4 4	4 7	2 7	4 6
7-10	0 4	3 4	3 3	2 5

Legend: N - Nausea; I - Itching

References:

1. Douglas MJ et al: Can Anaesth Soc J 33:737-40, 1986
2. Bromage PR et al: Anesthesiology 58:257-62, 1983

SCORES FOR SIDE EFFECTS



A991

TITLE: PREDICTIVE SIGNS OF HYPOTENSION AFTER SPINAL ANESTHESIA FOR CESAREAN SECTION

AUTHORS: J. CASTIEL, S. BLANOT, A. LIENHART

AFFILIATION: Anes. Dept., Saint-Antoine Hospital, PARIS - FRANCE

Arterial hypotension during spinal anesthesia for cesarean section (CS) is a persistent problem. This study was conducted to find predictive signs of inadequacy of a fixed prophylactic dose of ephedrine (E).

METHODS: 38 healthy women undergoing elective CS gave informed consent. Preanesthetic systolic blood pressure (SBP) was between 100 and 130 mmHg in all patients. They received 1000 ml of colloid solution and 500 ml of crystalloid solution. Spinal anesthesia was then performed with 9-10 mg of 0.5 % plain bupivacaine. Immediately after the injection patients were placed supine with a wedge under the right hip and maternal blood pressure and heart rate (HR) were monitored (Dinamap®) every minute until delivery. IV boluses of E (5 mg) were given 1 min and 2 min after intrathecal injection. Further 5 mg boluses of E were given when SBP fell below 100 mmHg defining retrospectively two groups: in group A SBP remained above 100 mmHg without additional bolus of E; in group B further boluses of E were needed. Umbilical venous pH was measured at birth and APGAR score recorded at 1 and 5 min. Statistical analysis used ANOVA and chi-square test. Changes in HR and/or SBP before any fall of SBP below 100 mmHg were analyzed for specificity (Sp) and

sensitivity (Se) as predictive signs. Results are expressed as mean ± sem.

RESULTS: 11 patients were in gr.A, 27 in gr.B. Nausea and vomiting were significantly less frequent in gr.A (9 %) than in gr.B (48 %). No significant difference in foetal blood pH and APGAR scores was observed. The sensitive block level was similar in both groups at 5 min ($T_{7.0 \pm 4}$ vs $T_{6.8 \pm 3}$) and 15 min ($T_{3.7 \pm 2}$ vs $T_{3.7 \pm 3}$). Fig 1 and 2 show the changes in SBP and HR after intrathecal injection for each group. In gr.A HR did not change. In gr.B HR significantly increased before SBP fell below 100 mmHg. To predict the occurrence of a hypotension below 100 mmHg, 20 % increase in HR has Sp of 1.0 and Se of .59; 20 % decrease in SBP before SBP falls below 100 mmHg has Sp of .91 and Se of .30; HR value ($b \cdot \text{min}^{-1}$) higher than the value of SBP (mmHg) has Sp of .91 and Se of .89.

DISCUSSION: These results suggest to use further injections of ephedrine before SBP falls below 100 mmHg if HR value increases more than 20 % or becomes higher than SBP expressed in mmHg.

