POSTER DISCUSSION XI

A1087

TITLE: PRE-INCISIONAL VERSUS POST-INCISIONAL LUMBAR EPIDURAL FENTANYL REDUCES PAIN FOLLOWING THORACIC SURGERY: A RANDOMIZED DOUBLE-BLIND CROSSOVER STUDY.

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There is a growing body of evidence suggesting that surgical incision may sensitize CNS cells and induce lasting changes which contribute to enhanced post-operative pain.

The aim of the present study was to test the hypothesis that nociceptive pathway blockades before surgical incision would result in less post-operative pain when compared with nociceptive pathway blockade after incision.

Following institutional ethics committee approval and completion of written informed consent, 13 patients (ASA II) scheduled for elective thoracic surgery through a lateral thoraomyectomy incision, were randomized to one of two groups, and prospectively studied in a double-blinded manner. Epidural catheters were placed in the L2-3 or L3-4 interspaces pre-operatively, and the position confirmed with lidocaine. Group 1 (n = 6) received epidural fentanyl (4 μg/kg, in 20 cc normal saline) 40 min prior to surgical incision, followed by 20 cc epidural normal saline infused 5 min after incision. Group 2 (n = 7) received epidural normal saline (20 cc) 40 min prior to surgical incision, followed by epidural fentanyl (4 μg/kg, in 20 cc normal saline) infused 5 min after incision. Narcotic analgesics were not used for pre-medication or intra-operatively. Patients were anesthetized with thiopental, N2O/O2, isoflurane, and vecuronium or pancuronium. Post-operative analgesia consisted of PCA iv morphine. Cumulative PCA usage (mg morphine) was assessed at 2, 4, 6, 12, 24, 48, and 72 hrs.VAS pain scores were measured at 6, 12, 24, 48, and 72 hrs after surgery. VAS pain scores and PCA requirements were analyzed by 2-way repeated measures ANOVAs using Group as the independent samples factor and Time as the repeated measures factor. Data are presented as means ± SEM. P < 0.05 is considered statistically significant.

The results of the ANOVA on the VAS pain scores indicated a significant main effect of Time and a significant Group x Time interaction. The Group x Time interaction revealed that the mean VAS pain score in Group 1 (2.5 ±0.8) was significantly less than Group 2 (5.6 ± 1.0) at 6 hrs post-surgery but not afterwards (Fig. 1). The ANOVA on PCA requirements was significant only for the Time factor, indicating that mean PCA consumption increased significantly over time for Groups 1 and 2, but there were no statistically significant differences between the groups (Fig. 2).

Analysis of PCA consumption corrected for body weight showed the same pattern of results. These results suggest that pre-incisional administration of analgesic agents may have a significant beneficial impact on the development of post-operative pain, perhaps by attenuating the development of central pain sensitization processes.

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TITLE: POSTOPERATIVE OUTCOME AFTER ABDOMINAL SURGERY: PATIENT CONTROLLED ANALGESIA VERSUS EPIDURAL ANALGESIA WITH MORPHINE OR BUPVIVACAIN/ MORPHINE

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A controlled randomised clinical investigation was performed in order to assess if intravenous epidural analgesia with morphine (EM) could reduce the rate of postoperative complications after major abdominal surgery in comparison to sole general anesthesia and postoperative epidural analgesia with morphine (PCA) and to intravenous epidural analgesia with bupivacaine and light general anesthesia followed by postoperative epidural bupivacaine-morphine analgesia (EBM).

After approval of the ethics committee of the university and informed consent 292 patients undergoing infrarenal aortic bypass operation, gastrectomy or gastric resection, duodenal-pancreatic resection, Whipple’s procedure or cystectomy were randomly assigned to one of three groups:

1. PCA (n=107): operation under general anesthesia (midazolam, fentanyl, O2/N2O, addition of inhalational anesthetic as necessary, pancuronium bromide). Postoperative analgesia consisted of PCA with morphine (Promijet®), bolus 2 mg, lock out 5 min (recovery room, ICU) or 15 min (ward).

2. EM (n=90): operation under light general anesthesia (as above, reduced doses) plus epidural infusion of a mixture of bupivacaine (0.25%) and morphine (60 μg/ml) (0.1 ml/kg/h). Postoperative epidural injection of morphine (0.05 mg/kg in 10 ml normal saline) on patient’s request up to the 3rd postoperative day.

3. EBM (n=95): operation under the same regimen of general/anesthetic anesthesia as in the EM group. The epidural infusion of morphine in bupivacaine 0.25% was continued postoperatively (72 h).

Analgesia was equal but of slightly inferior quality in both the PCA and EM group compared to the EBM group. The ability to control pain was best in the EBM group and significantly worse in the PCA and EM group, with no difference between the latter (4 observations/d on postoperative day 1, 2 and 3).

On the lst postoperative day the rate pressure product was lower in the EBM group as compared to both others. There was no difference between the groups in laboratory parameters (hematocrit, leucocytes, platelets, plasma glucose, creatinine, GOT and blood gas analysis), the time to the first postoperative defecation (PCA 901:3 h; EM 851:3 h; EBM 851:33 h), the duration of hospitalisation (PCA 191:65 d; EM 181:61 d; EBM 191:69 d) and the frequency or intensity of postoperative complications (organ failure, reoperation, major infection, sepsis, thromboembolism, metabolic disturbance, mental confusion). Epidural morphine analgesia, although lacking the cardiovascular side effects of epidural bupivacaine, does not reduce the overall morbidity after major abdominal operations. A superiority of epidural anesthesia & analgesia to standard anesthetic and analgetic techniques as reported* could not be demonstrated.

Reference
* Anesthesiology 66:729–736, 1987