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Patient-controlled epidural analgesia or intravenous analgesia alone for pain therapy after caesarean section?

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Background: Patient-controlled analgesia (PCA) techniques are popular treatments for post-Caesarean section pain. However, there is some doubt whether a Caesarean section needs such a multimodal approach. These techniques have not been compared with intravenous peripheral analgetics and opioids with regard to analgesic quality, side effects and maternal satisfaction.

Methods: Fifty patients scheduled for elective Caesarean section were randomized into two groups. In group 1 (n=25), spinal anesthesia alone was performed using 2.5 mL hyperbaric 0.5% bupivacaine. For postoperative pain therapy, a continuous infusion of novaminsulfone (4g/24 hrs), which could be supplemented with i.m. opioids on request (piritramid 15 mg), started right after surgery. In group 2 (n=25), combined spinal-epidural anesthesia (CSE) was performed with also 2.5 mL hyperbaric bupivacaine and an epidural catheter was connected to a PCA pump delivering a mixture of bupivacaine 0.04% and sufentanil 1 µg/mL (baseline 5 mL/h). A bolus of 2mL of that mixture with a lockout period of 20 min could be obtained. Patients were assessed at 15 min, 4 hrs, 8 hrs, 22 hrs and 32 hrs post-operatively for pain scores (visual analogue scale VAS) at rest and under coughing, degree of motor blockade (Bromage scale), side-effects and volume of local anesthetic used or i.m. opioids needed. Maternal satisfaction scores were measured retrospectively at the end of the first postoperative day.

Results: The two groups of patients were similar demographically. VAS pain scores both at rest and under coughing were significantly lower in the PCA-group, more particularly at the day of surgery. Nausea and vomiting were not significantly more often registered in the PCA-group. PCA treated patients required significantly higher nurse interventions on the surgical ward because of motor blockade (never higher than Bromage scale degree one) until the evening of the day of surgery. Both treatments resulted in high maternal satisfaction rates.

Conclusions: It was concluded that epidural PCA induced better pain relief, but caused difficulties in post-operative mobilization because of motor blockade. Since both techniques resulted in high maternal satisfaction rates, the need of such multimodal approach for post-Caesarean section pain should be reconsidered by further investigations on that field.