

### 3 Summary

#### Background and objective

Epidural administration of local anesthetics and opioids has been found as effective for the treatment of postoperative pain after major elective urologic surgery. The analgetic potency and side effects of epidural bupivacain with opioids, intravenous morphine, and the combination of epidural trimecain with morphine for postoperative analgesia were compared in a prospective randomized open label study.

#### Methods

A total of 244 patients, ASA I-III, undergoing major elective urologic surgery were divided into 3 groups. The randomization was made without emphasis on gender. Patients who had an expected length of surgery of less than 3 hours received intravenous morphine (group C, n = 84) for postoperative analgesia. Patients with an expected length of surgery for more than 3 hours were randomly divided into group A (epidural trimecain with morphine, n = 76), or group B (epidural bupivacain with fentanyl, n = 84). In group A trimecain 50 mg with 4 mg morphine was given epidurally in 8-hour intervals or more depending on the level of absence of pain. In group B, the infusion of 0,25% bupivacain and fentanyl 2 ug/ml was administered at an 8 ml/h infusion rate. If failure to provide adequate analgesia was observed, the infusion rate was increased and/or a more concentrated solution was administered. In group C, morphine 2 mg/h was administered with 2 mg rescue boluses every 5 minutes until a predefined value of visual analog scale (VAS) was achieved. No other systemic analgesics were given. The following parameters: heart rate, pain at rest and during mobilization using VAS, sedation score, oxygen saturation measured by pulse oxymetry, respiratory rate, noninvasive blood pressure, motor blockade, nausea, vomiting, and pruritus were recorded every hour during the first six hours, and than 12, 24 and 36 hours using a standardized protocol. The occurrence of side effect was recorded.

#### Results

In the epidural trimecain / morphine group (group A), significantly lower values of VAS during first 6 hours after surgery were recorded in comparison to other groups. There were higher sedation score values during first 12 hours in group C. The mean arterial pressure was stable during the 36 hours period after surgery in both epidural groups, no vasopressors were required. The total sum of side effects was significantly lower in group A than in other groups.

#### Conclusion

The combination of epidural trimecain / morphine might provide effective postoperative analgesia after major urological procedures with minimal side effects.