

## THORACIC EPIDURALLY ADMINISTERED BUPIVACAINE AFFECTS URETHRAL SPHINCTER TONUS IN WOMEN AFTER OPEN RENAL SURGERY

### Hypothesis / aims of study

It is unclear if epidurally administered opioids influence urethral sphincter tonus, whereas it is well known that systemic administration of opioids does. The objective of this study was to determine which epidurally administered drugs or drug mixtures affect urethral sphincter tonus in women undergoing open renal surgery.

### Study design, materials and methods

Open, observational, single center study. Twenty-eight women with no lower urinary tract symptoms, who underwent open renal surgery with thoracic epidural analgesia (TEA), were pooled in three groups with different epidural regimens (8 with bupivacaine 0.125%, 7 with bupivacaine 0.125% and fentanyl 2 µg/ml and 13 with bupivacaine 0.1% plus fentanyl 2 µg/ml and epinephrine 2 µg/ml). All women underwent urethral pressure measurements before TEA and during TEA 2-3 days postoperatively. All patients received a TEA placed at the insertion site interspace T 8-9.

### Results

Maximum urethral pressure at rest decreased significantly during TEA with bupivacaine alone (median 70 cmH<sub>2</sub>O (range: 60-80) to 43 (19-68),  $P=0.031$ ) and with bupivacaine/fentanyl/epinephrine (75 cmH<sub>2</sub>O (range: 33-115) to 56 (24-105),  $P=0.028$ ) whereas with bupivacaine/fentanyl no significant change could be detected (74 (49-95) vs 67 (38-86),  $P=0.156$ ). In all groups functional profile length at rest was not influenced during TEA.

### Interpretation of results

TEA appears to decrease urethral closing pressure in women. The addition of fentanyl may reduce this effect.

### Concluding message

TEA affects urethral function. This effect may depend on the drug mixture administered.

### Disclosures

**Funding:** none **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Kant. Ethikkommission Bern **Helsinki:** Yes **Informed Consent:** Yes