

**Results and Discussion:** The duration, in minutes, of sensory, motor block, analgesia and ENV (Verbal Numerical pain Scale) average  $\pm$  standard deviation evaluated between groups, LC40, L40, LC20 and L20 was: Sensitive-338.2  $\pm$  77.7; 316.6  $\pm$  57.7; 332.3  $\pm$  58.5 and 286.8  $\pm$  72.7 (p0 .17); Motor-308.9  $\pm$  82.0; 292.6  $\pm$  66.7; 328.3  $\pm$  61.4 and 260.5  $\pm$  79.0 (p0 .067); Analgesia-301.3  $\pm$  84.9; 268.6  $\pm$  64.5; 341.6  $\pm$  76.0 and 236.5  $\pm$  62.6 (p0 .0008); ENV pain-3.87  $\pm$  2.8; 5.8  $\pm$  2.46; 3.73  $\pm$  3.31 and 5.27  $\pm$  2.15 (p0 .089), respectively.

**Discussion - the use of clonidine associated to lidocaina significantly in-**

creased the duration of analgesia, as well as decreased postoperative pain in both groups it was used. There is also significant effect of clonidine on duration of sensory and motor blocks. There is no significant effect of volume on clinical variables and treatment, regardless of clonidine.

**Conclusion(s):** Clonidine produced better effects than enhancing volume of local anesthetic in brachial plexus block.

#### References:

1. Anesth Analg, 2007;104:532-7; Anesthesiology, 2009 ;111:406-15; Br J Anaesth, 2005;94:112-6.

## Pharmacology

### 9AP1-1

#### Influence of bupivacaine on inflammation markers

Dotsenko V., Kligenenko E.

State Institution "Dnepropetrovsk Medical Academy of Ministry of Health of Ukraine", Department of Anaesthesiology and Intensive Care, Dnepropetrovsk, Ukraine

**Background and Goal of Study:** Surgical operations have significant influence on homeostasis during the perioperative period. Surgical trauma leads to development of a stress response, caused by activation of the neuroendocrine and immune system. Excess production of cytokines increases the risk of organ dysfunction, morbidity and mortality. The use of local anesthetics for regional blockades can decrease systemic inflammation, and, consequently, decreases the number of complications during the postoperative period. The Goal: to study the influence of bupivacaine on inflammation markers during the operation abdominoplasty.

**Materials and Methods:** After approval by the local ethics committee, 49 patients were prospectively arranged on 2 groups depending on the type of anesthesia: the control group (n=27) was operated on using total intravenous anesthesia (propofol and phentanyl) with miorelaksation and artificial ventilation. The experimental group (n=22) was operated on using epidural anesthesia with bupivacaine (mean dose 100 mg). All patients were comparable according to sex, age, concomitant pathology and ASA degree (I-II). The mean duration of the surgery was 114  $\pm$  11 min. The serum levels of IL-1 $\alpha$ , TNF $\alpha$  and IL-10 before surgery (stage 1), after 24 hours (stage 2) and 5 days after surgery (stage 3) were studied.

**Results and Discussion:** Analysis has revealed reliable decreases of the IL-1 $\alpha$  level after 24 hours (13,3 $\pm$ 1,3 vs 17,6 $\pm$ 1,1 pg/ml (p=0,005)) and after 5 days (12,9 $\pm$ 1,9 vs 17,1 $\pm$ 2,2 pg/ml (p=0,019)) post-surgery under the epidural anesthesia. In the experimental group the level of TNF $\alpha$  unreliably decreases after 1 day post-surgery (3,1 $\pm$ 1,1 vs 3,6 $\pm$ 0,5 pg/ml (p=0,365)) with subsequent increases on day 5 (4,7 $\pm$ 1,2 vs 3,6 $\pm$ 0,9 pg/ml (p=0,098)). Analysis has not revealed reliable changes of the level IL-10 from the baseline during all stages in patients of both groups.

**Conclusion(s):** Epidural anesthesia with bupivacaine reliably decreases the level of systemic proinflammatory IL-1 $\alpha$ .

### 9AP1-2

#### Effects of Shenmai pre-treatment on bupivacaine cardiotoxicity in rats

Wang X., Xu X.

Medical School of Nanjing University Affiliated Nanjing Drum Tower Hospital, Department of Anaesthesiology, Nanjing, China

**Background and Goal of Study:** We evaluated the effects of Shenmai (a kind of traditional Chinese medicine) pre-treatment on the cardiotoxicity induced by an infusion of bupivacaine and the success rate of resuscitation in anesthetized rats.

**Materials and Methods:** Sixteen adult, female Sprague-Dawley rats were randomly divided into two groups: group 1 pre-treated with normal saline (10ml $\cdot$ kg $^{-1}$  intraperitoneal every day for three days), and group 2 pre-treated with Shenmai (10ml $\cdot$ kg $^{-1}$  intraperitoneal every day for three days). At the 3rd day, one hour after the intraperitoneal pretreatment injection, the rats were anesthetized with thiopental sodium and ketamine intraperitoneally. An overdose of bupivacaine of 0.75% 6 mg/100g was injected intraperitoneally in both groups.

**Results and Discussion:** The heart rate and blood pressure in group 2 after bupivacaine injection decreased a little, showed no significant difference compared with baseline. The systolic pressure, mean arterial pressure and

diastolic pressure in group 1 were significant decreased in 3.9 $\pm$ 1.0 min after bupivacaine injection and then all fell to zero quickly. After bupivacaine injection, prolonged PR interval and increased QRS complex happened in both groups. The mean QRS alteration time was 3.95  $\pm$  1.03 min in group 1 while 4.3 $\pm$ 1.3 min in group 2, which appeared significant difference. The time to sinoatrial block was 5.7  $\pm$  2.1 min in group 1 and 1.02  $\pm$  1.83 min in group 2, which also showed significant difference. There were no further changes on EEG in the following time in group 2, and all the rats in group 2 were all alive in 30min after bupivacaine injection. The mean time to asystole in group 1 was 8.75  $\pm$  3.5 min, and none was alive in 30min after bupivacaine injection.

**Conclusion(s):** Pre-treated with traditional Chinese medicine of Shenmai may decrease the cardiotoxicity induced by bupivacaine in rats, and may enhance the survival rate.

#### References:

1. Zink W, Graf BM. Anaesthesist. Toxicology of local anesthetics. Clinical, therapeutic and pathological mechanisms. 2003;52(12):1102-23.2. Ladd LA, Chang DH, Wilson KA, et al. Effects of CNS site-directed carotid arterial infusions of bupivacaine, levobupivacaine, and ropivacaine in sheep. Anesthesiology. 2002;97(2):418-28.

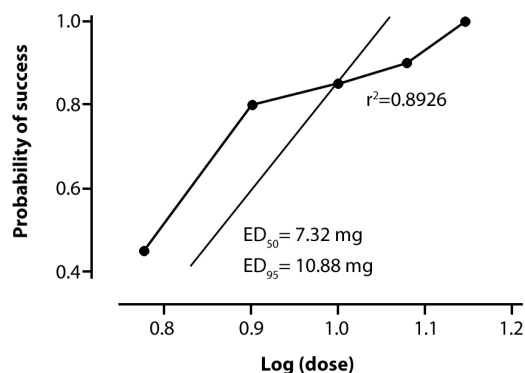
### 9AP1-3

#### ED<sub>50</sub> and ED<sub>95</sub> of isobaric levobupivacaine with fentanyl for transurethral resections under combined spinal epidural anaesthesia

Karslı D.N., Subası D., Terzioğlu B., Turan G., Ekinci O.

Haydarpaşa Numune Training and Research Hospital, Department of Anaesthesiology and Intensive Care, Istanbul, Turkey

**Background and Goal of Study:** The use of levobupivacaine as pure S(-) enantiomer of bupivacaine is progressively increased due to its lower cardiotoxicity and neurotoxicity and shorter motor block duration. Opioids are commonly coadministered with lower doses of local anesthetics to decrease the adverse effects of local anesthetics by achieving the same motor and sensory block. This study aimed to determine minimum effective dose, ED<sub>50</sub> and ED<sub>95</sub> of intrathecal isobaric levobupivacaine by addition of fentanyl for patients undergoing transurethral resections.



[Dose-response relationship by regression model]

**Materials and Methods:** After hospital ethics committee approval and getting written informed consent from patients, 100 patients with ASA I-III aged 18-85 were included in the study. Patients received intrathecal isobaric levobupivacaine in doses of 6, 8, 10, 12 or 14 mg in equal volumes with an added 25 mcg intrathecal fentanyl. Sensory levels (pinprick) were evaluated at 1, 3,