	RS	RC1.5	RC3	p
Rescue doses (n)	2(1–2)	1(0–1)*	1(1–2)*	0.025
Perineal analgesia	27/51(53%)	18/51(35%)	25/51(49%)	ns
R consumption (mg/h)(mean=SD)	15.2±5	13.2±3.7	14.3±4.4	ns

[with RS (median, IQR)]*

Conclusions: Total LA consumption is equivalent when sufentanil or clonidine is added to ropivacaine. Clonidine (1.5–3 μg/ml) significantly reduces the number of rescue doses. Clonidine 3μg/ml does not offer any advantage over clonidine 1.5 μg/ml.

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INTENSITY OF NEUROMUSCULAR BLOCK DURING INTRAVENOUS REGIONAL ANESTHESIA: THE INFLUENCE OF ISHEMIA AND/OR LOCAL ANESTHETIC ACTIVITY

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Background and aims: Neuromuscular block (NMB) in IVRA is result of local anesthetic (LA) activity and ischemia in exsanguinated extremity where nerve branches are compressed by tourniquet. Optimal muscle relaxation develops for mostly hand surgery intervention immediately after garroting the arm and LA administering. In same cases poor NMB was noted[1]. Dynamic of NMB during IVRA was the aim of this study.

Methods: 44 patients (both gender, ASA I/II) were included in prospective study. Patients were randomized and divided in two groups where hand surgery was performed in infiltration anesthesia (10-15 ml of 1% lidocaine) (Group I) or IVRA (40 ml of 0.5 % lidocaine)(Group LA). Eksangvination and tourniquet (upper arm, 100 mmHg pressure above systolic BP) was applied in bought groups. All patients were premidicated (midazolam 0.5 mg/kg) and sedated (midazolam 0.1 mg/kg, sufentanil 0.1 mcg/kg) before procedure. Neuromuscular function was monitored by TOF-stimulation. Acceptable (≤ 5% of control twitch height in presence of 3rd twitch of TOF stimulation) and complete NMB (without twitches or presence of 1st and 2nd twitch), VAS and Ramsay sedation score were measurement. Statistical analysis was performed (SPSS 11.0).

Results: VAS score was equal between groups (2-3)(P=0.7568). Under 60 minutes, 7% of NMB was associated with ischemic condition and 93% to LA activity. Acceptable NMB was presented in 96% patients in IVRA what allows satisfied surgical work in 80% of them. Positive correlation was found between pronounced muscular structure and patient psycho-sensitivity with consequently difficult surgery conditions (14% vs. 16% in Group I) (P=0.145). Complete NMB was achieved only in 4% during IVRA but was associated with higher sedation score (4 vs. 2–3). NMB recovered faster in Group I (12.5+/-2 vs.19+/-3 min)(P=0000).

Conclusions: Intensity of NMB in IVRA allows good surgical condition where complete NMB is not needed and in absence of pronounced muscular structure.

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A COMPARISON OF ROPIVACAINE 0.15%, LEVOBUPIVACAINE 0.15% AND ROPIVACAINE 0.15% PLUS FENTANYL 2μG/ML FOR PATIENT-CONTROLLED EPIDURAL ANALGESIA AFTER CAESAREAN SECTION

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Background and aims: The aim of this study was to compare the postoperative analgesic efficacy of epidural ropivacaine 0.15%, levobupivacaine 0.15% and ropivacaine 0.15% plus fentanyl 2μg/ml, when used with a Patient-Controlled-Analgesia device (PCEA) after Caesarean section.

Methods: Sixty women, ASA I–II, 18–45 ys, with singleton fullterm pregnancy undergoing elective Caesarean section were enrolled. Anaesthesia was achieved with isobaric bupivacaine 7.5–9mg with 20μg fentanyl via combined spinal-epidural technique. Postoperatively, patients were randomized to receive PCEA with either ropivacaine or levobupivacaine 0.15% (basal rate 6ml/h, bolus 5ml/20 minutes), while a third group received ropivacaine 0.15% plus fentanyl 2μg/ml (basal rate 6ml/h, bolus 4ml/20 minutes). Sympathetic and sensory level of analgesia, motor ability (Bromage 0–3), and pain scores at rest, movement and cough (VAS 0–10), haemodynamic parameters, oxygenation, side effects and total doses of local anaesthetic, were documented every 6 hours for 24 hours. Overall patient satisfaction was assessed following a descriptive scale (1=very satisfied to 4=not satisfied).

Results: No significant difference was observed in pain scores at all time intervals. A significantly higher sympathetic and sensory blockade occurred with levobupivacaine and ropivacaine 0.15% with no significant difference regarding total local analgesic consumption (p=0.08). Rescue analgesic requirements did not differ between the three groups (p=0.8) while patients' satisfaction was significantly higher in the ropivacaine 0.15% plus fentanyl group (p=0.03). Haemodynamics, oxygenation, nausea, pruritus and numbness did not differ between the groups.

Conclusions: Dilute local anaesthetic solutions provided satisfactory postoperative analgesia after Caesarean section when used with a PCEA device. The combination of ropivacaine 0.15% with fentanyl 2μg/ml appeared to be superior, since it provided higher patient satisfaction with statistically equal local anaesthetic consumption and pain scores.

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WRONG-ROUTE DRUG ERRORS IN EPIDURAL ANAESTHESIA

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Background and aims: Inadvertent injection of non-epidural drugs in the epidural space potentially can lead to serious morbidity and mortality.

Objective: The aim of this review is to collate reported incidents of this type, describe the potential mechanisms of occurrence and identify potential solutions.

Methods: We searched medical databases, covering a period of 43 years, regarding this type of medication incident.

Results: Despite inevitable underreporting of wrong-route errors in neuraxial blocks, our search revealed a large list of wrong drugs injected into an epidural catheter. An analysis of more than 50 inadvertent injections includes drugs with less or no long lasting neurological deficits such as thiopental, methohexital, midazolam, vecuronium, succinylcholine, (cis-)atracurium, (remi-) fentanyl, paracetamol, morphine, ephedrine, metaraminol, antibiotics, antiemetics, glucose, insulin, and parenteral infusions, such as total parenteral nutrition and intralipid infusion. Other drugs may be more etching and can result in temporary or permanent neurological deficits such as phenol, ether, hypertonic saline, magnesium sulphate, paraldehyde and potassium chloride.

Conclusion: Most drugs do not lead to sequelae other than pain with injection or transient neurological complaints. Except for potassium chloride, which may cause a range of problems when injected epidurally, from intense pain to permanent paraplegia and death. Also paraldehyde can result in immediate pain progressing to quadriplegia. The dose of the inadvertent injected drug and the time frame certainly play a role in the outcome. "Syringe swap", "ampoule error", and epidural/intravenous line confusion due to inaccurate or absent accurate colour coding of epidural catheters, were the main sources of error. Preventive strategies include colour coding labels of epidural catheters and ampoules, physical separation of intravenous and epidural access points, prefilled syringes and specific non Luer-lock epidural injection ports.

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COMPARISON OF 22/27G MICROTIP VS 25G PENCAN SPINAL NEEDLE; INSERTION CHARACTERISTIC AND COMPLICATIONS

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Background and aims: Since the first spinal anesthesia (SA) by Bier in 1898, improvements in medication and needle designs have led to reduction in complications. We compare 22/27G Microtip (Polymedic [R]) 9cm needle of base 22G tapering to 27G pencil tip with modified sprotte type 9cm Pencan (B. Braun [R]) 25G pencil tip needle on ease of needle insertion, first attempt success rate and CSF flow rate as well as incidence of paraesthesia, post dural