

70. A COMPARISON OF 0.5% ROPIVACAINE (5% GLUCOSE) WITH 0.5% BUPIVACAINE (8% GLUCOSE) WHEN USED TO PROVIDE SPINAL ANAESTHESIA FOR ELECTIVE SURGERY

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Ropivacaine has been used little for spinal anaesthesia, but in plain solutions it has, like bupivacaine, resulted in very variable extent of block (1). Previous work at this centre has demonstrated the efficacy of glucose containing solutions of ropivacaine (2). This study was designed to compare directly glucose containing solutions of ropivacaine and bupivacaine.

Forty patients (ASA status I-II) undergoing spinal anaesthesia gave informed consent for the study. They were randomly allocated to receive 3 ml of ropivacaine 5 mg ml⁻¹ in glucose 50 mg ml⁻¹ or bupivacaine 5 mg ml⁻¹ in glucose 80 mg ml⁻¹. This was injected over 10-15 sec through a 25 swg Whitacre needle ('port' facing laterally). After injection in the left lateral position, patients were turned supine for recording of sensory block (27 swg dental needle), motor block (Bromage scale 0-3), pulse rate and blood pressure at 2, 5, 10, 15, 20, 25 & 30 min. Further assessments were made at 30 min intervals (surgery permitting) until complete block regression. Patients were contacted at 24 hr and 1 wk to identify any late sequelae.

There were no statistically significant differences between the groups in age, sex, height or weight. All blocks were adequate for the proposed surgery, but there were significant differences in onset, maximum extent and duration of sensory block in the group that received bupivacaine (table). More patients in the bupivacaine group developed complete (Grade 3) motor block. Patients receiving ropivacaine mobilised and passed urine more quickly than those receiving bupivacaine. Bladder catheterisation was performed only when required for surgical indications. Fourteen patients in the bupivacaine group, and three in the ropivacaine group, required treatment for hypotension (>30% decrease systolic blood pressure). One patient in each group developed a post-dural puncture headache, which settled spontaneously. There were no transient neurological symptoms in either group.

Ropivacaine in glucose 50 mg ml can be used to provide reliable spinal anaesthesia of shorter duration, and with less hypotension, than bupivacaine. The recovery profile may be of interest with more surgery being performed in the day-case setting. Further evaluation is merited.

Table: Results of spinal block assessment in 2 groups of 20 patients shown as median (range) unless otherwise indicated.

1. van Kleef JW et al. *Spinal anaesthesia with Ropivacaine. Anesth Analg* 1994;78: 1125-30

2. Whiteside JB et al. *Spinal anaesthesia with ropivacaine 5 mg ml⁻¹ in glucose 10 mg ml⁻¹ or 50 mg ml⁻¹ (accepted for publication)*

	Bupivacaine	Ropivacaine	p value
Sensory Block			
Maximum level (dermatome)	T5 (T3-T11)	T7 (T4/5-T11)	0.0007
Time to onset at T10 (min)	2 (2-10)	5 (2-25)	0.0046
Duration at T10 (min)	118 (80-238)	57 (28-145)	0.001
Time to complete regression (min)	255 (150-240)	180 (120-270)	0.0001
Motor Block			
Patients with grade 3 block n (%)	20 (100)	14 (70)	0.02
Time to complete regression (min)	180 (120-210)	90 (60-180)	0.0001
Recovery			
Time to mobilise (min)	331 (219-475)	254 (151-359)	0.0019
Time to micturition (min)	341 (268-497)	276 (177-494)	0.01