Hyperbaric ropivacaine and bupivacaine

Editor—Whiteside and colleagues¹ in their comparison of hyperbaric ropivacaine and bupivacaine for spinal anaesthesia...
state that ‘the key issue is the difference in clinical profile of the block…not the relative potencies of the two drugs’. It would have been much easier to draw valid conclusions from their study, however, had the authors chosen equipotent doses of the two drugs at the same baricity.

Capogna and colleagues\(^2\) have shown that for epidural analgesia, the analgesic potency of ropivacaine was 0.60 relative to bupivacaine. They went on to point out that claims for reduced toxicity and motor block must be considered with differences in analgesic potency in mind. Although their study looked at epidural analgesia, it seems unlikely that the relative potencies would be different for spinal anaesthesia.

Whiteside and colleagues\(^1\) explain their findings on the basis of ropivacaine having a different clinical profile, but one could equally well explain the faster onset, higher block and longer action of bupivacaine on the basis that a relatively larger dose of local anaesthetic was used.

When ropivacaine was launched, claims were made that it was less toxic and had less motor block than bupivacaine, but once it was realized that the drugs are not equipotent, many of the earlier studies were discredited. It is a pity that the present study, by not using equipotent doses, has further confused the issue.

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Editor—Thank you for seeking my views on the letter from Drs Aveling and Klineberg. It may be answered on three levels.

(i) The primary aim of our study was to compare a hyperbaric preparation of ropivacaine (in a dose which we had previously used successfully\(^3\)), with our usual dose of the standard UK hyperbaric preparation of bupivacaine for spinal anaesthesia.

(ii) One must be careful in drawing comparisons of the potencies of local anaesthetic drugs when used in different block procedures. The interplay between drug pKa and lipid solubility with the particular diffusion barriers associated with each block make for differences in performance, albeit small.

(iii) It has become very ‘popular’ to question the absolute potency of ropivacaine, but it is important to recognize that all the studies that question its potency have been performed using very low doses or concentrations, and sometimes a technique that is at best questionable, the measurement of the ‘minimum local analgesic concentration’. We,\(^4\) and others,\(^5\) have commented further on these issues elsewhere and I would refer your correspondents to these papers.

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1 Whiteside JB, Burke D, Wildsmith JAW. Comparison of ropivacaine 0.5% (in glucose 5%) with bupivacaine 0.5% (in glucose 8%) for spinal anaesthesia for elective surgery. Br J Anaesth 2003; 90: 304–8
3 Whiteside JB, Burke D, Wildsmith JAW. Spinal anaesthesia with ropivacaine 5 mg ml\(^{-1}\) in glucose 10 mg ml\(^{-1}\) or 50 mg ml\(^{-1}\). Br J Anaesth 2001; 86: 241–4
5 D’Angelo R, James RL. Is ropivacaine less potent than bupivacaine? Anesthesiology 1999; 90: 941–3

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