CORRESPONDENCE

Levobupivacaine for low-dose spinal anaesthesia

Editor—We wish to highlight a concern regarding the use of levobupivacaine for ‘low dose’ spinal anaesthesia.

As part of the Northumbria Healthcare NHS Trust protocol for enhanced recovery after primary lower limb arthroplasty, anaesthetists are encouraged to provide spinal anaesthesia using a low dose of local anaesthetic (LA). The aim is to limit the duration of motor block which in turn promotes earlier patient mobilization. We had previously used 0.25% ‘plain’ bupivacaine (Marcain®) 7.5–10 mg (i.e. 3–4 ml) to achieve a reliable sensory block for the duration of arthroplasty surgery.

A recent trust-wide initiative to standardize LA use in all clinical areas led to levobupivacaine (Chirocaine®) being adopted as the ‘drug of choice’ for most regional anaesthesia applications.

An unforeseen consequence of this policy has been our observation of a series of faltering spinal blocks when using identical volumes of levobupivacaine 2.5 mg ml⁻¹. Reported problems include failure to achieve adequate sensory block at all, unexpected fast regression of otherwise good blocks, and asymmetrical or patchy sensory block.

We attempt to compensate for these unreliable levobupivacaine blocks by using doses of 12.5–15 mg, possibly at the cost of delayed patient mobilization. The literature supports only a small discrepancy between the ED₅₀ of levobupivacaine and bupivacaine¹ and one article demonstrated equivalent efficacy between the two, albeit at 17.5 mg doses.² However, another article states that for a seemingly equivalent concentration, racemic bupivacaine is up to 13% more potent due to the different way that levobupivacaine’s weight/volume concentration is expressed.³ An additional explanation for the apparently reduced efficacy of levobupivacaine may lie in its pharmacological features, including its higher specific gravity and much lower pH when compared with similar concentrations of bupivacaine.⁴ We feel that the use of lower spinal anaesthetic doses may expose a difference in their respective efficacies, perhaps previously masked by the traditional use of higher intrathecal doses. We invite with interest any correspondence on this matter.

Declaration of interest

None declared.

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Intravenous paracetamol dosage in the neonate and small infant

Editor—The doses of i.v. paracetamol in neonates as recommended by the pharmaceutical companies, the British National Formulary (BNF for Children 2012), and in the APABGI guidelines for good practice in postoperative and procedural pain management¹ are unfortunately not in accordance with recent data from the literature. Current recommendations from pharmaceutical companies (Bristol-Myers Squibb®, Fresenius®, B Braun®) reflect two different problems: those of error of administration and those of low dose. We seek to review these two aspects.

Error of administration

I.V. paracetamol formulation strength is 10 mg ml⁻¹. Confusion between mg and ml is a well-known cause of drug administration error. The reports of i.v. paracetamol overdose are probably only the tip of an iceberg.²⁻³ The precautions proposed, mainly that i.v. paracetamol be prescribed in ml rather than in mg, are of course welcome and should be easy to implement in paediatric units. However, the recommendation of diluting each dose of paracetamol in 10 times its volume of glucose 5% or normal saline makes little sense and is potentially dangerous: it means administering 7.5 ml kg⁻¹ of i.v. fluids with each dose, that is, up to 30 ml kg⁻¹ in 24 h, a potential cause of volume overload and electrolytic disturbance in fragile neonates.

Insufficient dose

The pharmaceutical companies recommend a dose of 7.5 mg kg⁻¹ every 6 h in infants weighing <10 kg (it is <5 kg in the APABGI recommendations). This dose is based on a study performed in 1993 that included five neonates and seven infants. They all received 15 mg kg⁻¹ of i.v. propacetamol, a prodrug for paracetamol available at that time that has half the


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