Safety of paediatric neuraxial blocks: Revisited

Sir,

We read with great interest the review article on recent developments in paediatric neuraxial blocks by Ponde.[1] We would like to congratulate the author for a detailed review on the safety and effectiveness of the recent advances in paediatric neuraxial blocks. We have certain concerns regarding some of the issues dealt by the author.

First, the author has described various recent advances to make caudal epidural a more safe and effective technique. We feel that the role of test dose needs to be highlighted which is a routine practice in our centre. Though there are controversies around its usefulness in anaesthetized children, this practice will make caudal epidural a more safe technique particularly in centres where ultrasound and electrostimulation is not available. A test dose of 0.1 ml/kg of local anesthetic solution with 5μg/ml of adrenaline to a maximal volume of 3 ml is usually recommended. A heart rate increase of 10 bpm, a systolic blood pressure increase of 15mmHg, a T-wave amplitude increase of greater than 25% from baseline indicates possible intravascular injection.[2]

Second, the author has recommended a dose of 0.8 ml/kg of 0.5% bupivacaine for spinal anaesthesia in children, which is very high and also crosses the toxic limit. The maximum dose of bupivacaine recommended for regional anaesthesia is 2 mg/kg. A dose of 0.8 ml/kg of 0.5% bupivacaine is equivalent to 4 mg/kg, which is twice the toxic dose. This can lead to very high level of blockade and also increases the incidence of toxicity. Though the dose and volume of bupivacaine used for spinal anaesthesia varies with each institution, the recommended standard dose is shown in Table 1.[3] Bupivacaine toxicity can manifest as dysrhythmias with conduction block, widening of the QRS complex, torsades de pointes, ventricular tachycardia, or major cardiovascular collapse.[4] Bupivacaine can produce cardiac and central nervous system toxicity at serum concentrations of 2μg/ml in children.

Third, the author has mentioned ventricular shunts as absolute contraindication for spinal anaesthesia in children. We feel that neuraxial blocks can be safely given in children with ventricular shunts under an antibiotic coverage. Platis *et al*. also considers it acceptable to perform neuraxial block in children with shunt devices under protection of antibiotic prophylaxis.[5] Absolute contraindications for spinal anaesthesia in children include refusal of the parents, coagulation defects, infection at the site of insertion, true allergy to local anaesthetics, severe hypovolemia, progressive neurologic disease and uncontrolled convulsions.[6]

Table 1: Recommended dose of bupivacaine for spinal anaesthesia in children[3]

Bupivacaine (0.5%)	0-5 kg	5-15kg	>15kg
Dose (mg/kg)	0.5	0.4	0.3
Volume (ml/kg)	0.1	0.08	0.06

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