

EP248

MEPIVACAINE DOSING FOR SPINAL ANESTHESIA IN PEDIATRIC ORTHOPEDIC SURGERY: A RETROSPECTIVE CHART REVIEW

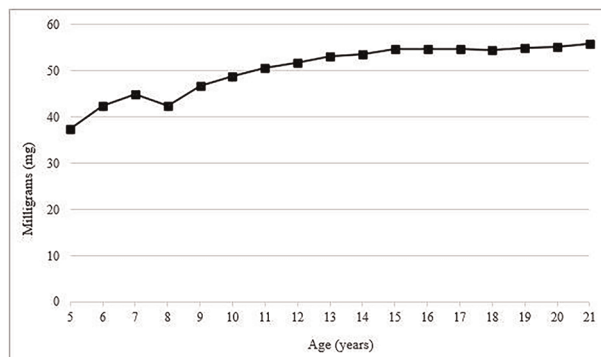
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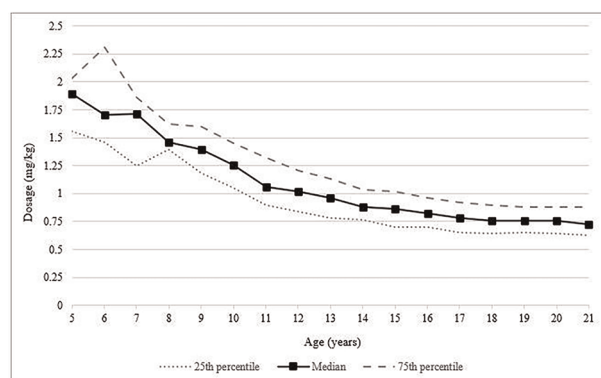
Background and Aims There is substantial literature on the use of spinal anesthesia in pediatric patients with bupivacaine, particularly in infants. Bupivacaine is a long-acting local anesthetic which is well suited to surgery in infants but less ideal for ambulatory surgery procedures in older children. Mepivacaine is an intermediate-acting agent commonly used for spinal anesthesia in adults and has potential benefits for use in older children. Currently, there are no published pediatric dosing guidelines for spinal mepivacaine. At Hospital for Special Surgery, mepivacaine is routinely used for spinal anesthesia in children. The aim of this study is to generate mepivacaine dosing guidelines based on milligrams per kilogram (mg/kg) and age.

Methods We performed a retrospective chart review of children who received mepivacaine for spinal anesthesia between 2016 to 2022.

Results The data extraction yielded 5,448 cases. Patient age ranged from 5 to 21 years. Mean surgery duration was 119 minutes (SD=48). Mean PACU length of stay was 222 minutes (SD=95). Weight in kilograms (kg) and mepivacaine dosage in milligrams (mg) was recorded for all patients (figure 1). The range and SD of total milligrams administered by age was also recorded (table 1). Median dosage in mg/kg of mepivacaine was calculated for each age group. Our analysis reveals that required dosage in mg/kg decreases by patient age and begins to plateau at age 15 (figure 2).



Abstract EP248 Figure 1 | Mean total mepivacaine dose administered by age



Abstract EP248 Figure 2 | Mepivacaine dosage in mg/kg reported as a function of patient age

Abstract EP248 Table 1 | Range of total milligrams of mepivacaine administered by age

Age (years)	Mean (mg)	SD	Dose range (mg)
5	37.5	5.3	30 – 45
6	42.5	5.9	37.5 – 52.5
7	44.8	4.3	37.5 – 54
8	42.5	2.7	37.5 – 45
9	46.8	5.9	33 – 60
10	48.8	6.5	33 – 63
11	50.6	7.2	30 – 66
12	51.8	6.8	37.5 – 66
13	53.2	6.9	37.5 – 69
14	53.5	7.1	37.5 – 75
15	54.6	6.8	30 – 75
16	54.6	7.3	30 – 75
17	54.7	7.5	30 – 75
18	54.6	7.9	30 – 75
19	54.9	7.2	30 – 75
20	55.3	7.0	30 – 75
21	55.9	6.6	37.5 – 75

Conclusions We describe mepivacaine dosage as a function of age and weight in children. As age and weight increase, a lower dose of mepivacaine per kg is required for spinal anesthesia.

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ABSTRACT WITHDRAWN