



Research Week 2023

Opening pressure and post-lumbar puncture headache in children undergoing intrathecal baclofen trial

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Keywords

Pediatric Neurology, Headache, Cerebral Palsy, Opening Pressure

Abstract

Background and Objectives:

Post-lumbar puncture (LP) headache occurs in ~8-15% of children although the frequency in children with hypertonia is not clear. The purpose of this study is to determine the frequency and predictors of post-LP headache in children with hypertonia undergoing LP with intrathecal baclofen injection (ITB trial).

Study Participants & Setting:

This was a retrospective study of all 43 children (mean 10.6 years, SD 4.3; 34.9% female) undergoing ITB trial from 2013-2022 at a single center. Most (86%) had a diagnosis of cerebral palsy, followed by a genetic disorder (11.7%), and traumatic brain injury (2.3%).

Materials & Methods:

Subjects were identified by CPT code and data was abstracted from the medical record. Mean opening pressure (OP) as a predictor of post-LP headache was evaluated with one-way paired T-test. Predictors of post-LP headache were evaluated via Fischer's exact test.

Results

Mean OP was 24.0 cm H₂O (SD 6.5, range 11-40). Five (11.6%) patients had an elevated OP (>28 cm H₂O). Seven patients (16.3%) developed a post-LP headache. Positional vomiting and irritability were common symptoms. Mean OP for the post-LP headache group was higher than in subjects who did not develop a headache (28.6 vs 22.4 cm H₂O, p<0.001). 60% with elevated OP developed post-LP headache. Baclofen pumps were placed in 4 (80%) of the patients with elevated OP and 6 (85.7%) with post-LP headaches with no complications.

Conclusions & Significance

The frequency of post-LP headache after ITB trial was similar to that reported in the literature. Elevated OP occurred in 12% and predicted post-LP headache. Physicians may use OP to predict higher risk for post-LP headache and should educate families about symptoms of positional irritability and vomiting. Elevated OP or post-LP headache may not preclude baclofen pump placement. Future study is needed to understand the pathophysiology of elevated OP in this population.