Managing Pain in Cerebral Palsy Hips using Ethanol Hip Joint Injection; A Retrospective Chart Review

Sterling Kneedler[1], Shea Ireland Buckley, David A Yngve[2]
[1]UTMB Galveston, [2]Univ of Texas Med Branch

INTRODUCTION: Non-ambulatory people with cerebral palsy may suffer from hip pain due to spasticity, increased tone, contractures and hip dysplasia. This pain can significantly interfere with daily life and wellbeing. Hip reconstruction might be indicated but some hips are not candidates for reconstruction. Salvage operations are another option but there is a need for a less invasive middle course. Less invasive management is not well studied. Our purpose is to evaluate the use of ethanol hip joint injection to alleviate severe or moderate to severe hip pain in people with cerebral palsy.

METHODS:

We studied 57 consecutive patients with 71 affected hips, who had a total of 104 hip joint injections. Average age was 17 (3-54) years. Injections were 10-15 ml of 75% ethanol into the hip joint, under C-arm guidance following a general anesthetic and prepping and draping. Gross Motor Functional Classification System (GMFCS) was 4 or 5. Data was collected from January 2010 to March 2023. The primary outcome was patient or family reported hip pain which was evaluated on a scale from 1-5 (1: mild, 2: mild to moderate, 3: moderate, 4: moderately severe, 5: severe). Following injection, a reduction in pain to < 4 was considered a clinical success. Patients with follow up > 3 months were included in the study. Time-to-event analysis was done using Kaplan-Meier cumulative event curves to evaluate time to a subjective pain score of < 4 for the first injection and then for all injections. Kaplan-Meier cumulative event curves were also used to estimate the duration of pain control after the first injection. For this, the event of interest was time to second injection in a patient who had reported a pain score < 4 after their first injection.

RESULTS:

Of the 71 hips treated with a first ethanol injection, 61 (86%) showed a decrease in pain score to < 4. The median time to pain control after a first injection was 4 months. The survival rate at 10 months was 85%. Of those 61 hips with a decrease in pain score to < 4, there were 19 (31%) that required a second injection. The median time to second injection was 33 months. When looking at all 104 injections, 35% had documented pain relapse. In our study 11 hips (15%) later had salvage surgeries and 6 hips (8%) developed avascular necrosis of the femoral head.

DISCUSSION AND CONCLUSION:

For 57 consecutive patients with cerebral palsy with 71 affected hips, an injection of 10-15 ml of 75% ethanol into the affected hip joint provided pain control in 86% with 31% having a second injection after a median time of 33 months. Based on these results, ethanol injection into the hip joint in those with severe or moderately severe pain should be further studied and considered as a treatment modality for those who are not a candidate for hip reconstruction.