Upper limb weakness and importance of immediate pain relief after cervical epidural steroid injections: more questions than answers?

To the Editor

In their recent paper, McCormick *et al*[1] report their observations using low-dose lidocaine on objective upper extremity strength and immediate pain relief following cervical interlaminar epidural steroid injections (CIESIs). In a randomized controlled trial (RCT), 120 patients with ≥4 weeks of cervical radicular pain were randomized to have lidocaine-added CIESI (L-CIESI) or saline-added CIESI (S-CIESI) along with 80 mg of triamcinolone acetonide. The primary outcome was upper extremity weakness, with ≥50% immediate pain relief reported as a secondary outcome measure. Adverse effects were collected 1 hour after the procedure. They observed no significant differences in the proportions of patients with post-procedural weakness and pain relief between groups. Although the authors should be commended for conducting a large, rigorous RCT, we feel there are important questions concerning generalizability that warrant attention.

By definition, chronic radicular pain refers to pain of at least 12 weeks' duration, with general recommendations being to avoid invasive interventions such as CIESI since a majority of patients will experience resolution as part of the natural course.[2] In this study, post-procedural weakness was noted in 42% of L-CIESI and 50% of S-CIESI patients. This finding should be concerning to pain specialists since unexplained weakness can be a sign of neurological compromise that necessitates a detailed neurological examination including emergent radiological imaging if indicated. Although the authors presumably discussed this possibility with patients beforehand, it is not clear whether they deemed weakness to be clinically meaningful or neurologically based. It is even more critical to understand the potential mechanisms since weakness was observed more frequently in the S-CIESI group, which precludes a lidocaine conduction block as the explanation. The authors considered post-procedure pain relief ≥50% as their success based on outcome measures for chronic pain trials, but this has no bearing on the long-term success of CIESI. Moreover, given the inclusion of patients with semi-acute pain and observations limited to the procedural period, can this be considered a chronic pain trial? Since CIESI carry significant risks,[3] these considerations become critical both for research and clinical practice.

Although evidence on the effectiveness of CIESI in reducing cervical radicular pain is mixed, a majority of studies indicate possible benefits with epidural injections over non-epidural injections,[4] and better results with CIESI when combined with physical therapy and medications.[5] However, what constitutes the optimal therapeutic injectate is unclear, as local anesthetics alone have been shown to improve outcomes in patients with chronic pain, both in the short and long term.[6] It is possible that the potential beneficial effect of local anesthetic may not be realized 20–30 min after the procedure. Four patients were excluded from the analysis and no intention-to-treat analysis was performed for pain relief. Yet despite this analysis, the risk difference was 9% (32%–19%), which increased to 13% with just another patient success in the L-CIESI group, indicating fragility of the study results.[1] Considering the risk–benefit ratio of steroids, it has been recommended that the lowest possible dose of steroids be used since there is no added benefit from using doses of depo-steroid above 40 mg.[6] Given all the above considerations, the study conclusions should be applicable only to the study population and for immediate post-procedural outcomes, without any inferences on long-term results. We also implore the authors to consider longer follow-up periods to elicit patient-relevant clinical outcomes.

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