

Parasagittal Approach to Lumbar Epidural Steroid Injections: A Cost-Effectiveness Analysis

Authors : K. D. Candido, A. Lissounov, I. Knezevic, N. Knezevic

Abstract : Background: The most commonly performed pain procedures in the USA is Lumbar Epidural Steroid Injections (LESI). There are three main types of these procedures: transforaminal (TF), interlaminar (IL) and caudal injections. It is expected for TF injections to have better outcomes than IL injections, based on the recently published systematic review. The studies presented in that review used a midline IL approach, but those with parasagittal IL approach were not taken into consideration. Our aim is to emphasize the efficacy of the lateral parasagittal (paramedian) IL approach in this review. Methods: We included five studies in this systematic review, which compared Parasagittal-IL (PIL) with either Midline-IL (MIL) or TF LESI. Total of 296 patients who had undergone different types of LESI were observed across the five studies, and the average pain and functional improvements were calculated and compared among groups. Results: Pain and function improvements with PIL approach is superior on 12 months follow up to MIL approach (53.4% vs. 14.7%) and (55% vs. 27.7%), respectively. A 12 months follow-up results between PIL and TF shows a near equivalent effectiveness for pain (58.9% vs. 63.2%) and function improvement (47.3% vs. 48.1%). An average follow-up of 17.1 days have shown better short-term pain relief for PIL than TF approach (45.8% vs. 19.2%), respectively. Number of repeated injections is lower for PIL injections than MIL. Number of weeks between 1st and 2nd injections: PIL averaged 15.8 weeks and MIL averaged 9.7 weeks. Third LESI injection is more common in TF group (30%) than PIL group (18.8%). Conclusion: Higher complication rates are associated with TF injections for which FDA7 issued an official warning. We have recorded better outcomes in pain and function improvement of Parasagittal-IL LESI as compared to midline-IL injection, in the presented systematic review. Parasagittal and TF injections have equivalent efficacy in Pain and Function improvements thus we advocate for Parasagittal-IL approach consideration as an alternative for TF injections.

Keywords : parasagittal approach, lumbar, back pain, epidural steroid injection

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