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Are epidural corticosteroid injections effective for lumbosacral radicular pain? A Cochrane Review summary with commentary

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Abstract.
BACKGROUND: Epidural corticosteroid injection is one of the most common non-surgical procedures for lumbosacral radicular pain.
OBJECTIVE: To assess efficacy and safety of epidural corticosteroid injections compared with placebo injections in patients with lumbosacral radicular pain.
METHODS: A summary and commentary of a Cochrane Review by Oliveira et al.
RESULTS: 25 studies with a total of 2740 participants were included in the review. Moderate quality evidence pointed out a small effect on leg pain at immediate and short-term follow-up and on disability at short-term and intermediate follow-up. Adverse events were not different between corticosteroid and placebo injections.
CONCLUSIONS: Epidural corticosteroid injection is slightly more effective than placebo for leg pain and disability at short-term follow up. Clinicians and patients however should be informed of the small effect size of the treatment.

Keywords: Epidural corticosteroid injections, lumbosacral radicular pain, sciatica, low back pain

The aim of this commentary is to discuss in a rehabilitation perspective the published Cochrane Review "Epidural corticosteroid injections for lumbosacral radicular pain" (Oliveira et al., 2020) by Oliveira et al.[a], under the direct supervision of Cochrane Back and Neck Group. This Cochrane Corner is produced in agreement with NeuroRehabiltation by Cochrane Rehabilitation.

1. Background

Lumbosacral radicular pain refers to pain radiating to lower limbs due to a dysfunction in the spinal nerve root. It is a fairly common pathology, with an estimated one-year prevalence ranging from 3% to

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[a]This summary is based on a Cochrane Review previously published in the Cochrane Database of Systematic Reviews 2020, Issue 4, Art. No.:CD013577, DOI: 10.1002/14651858.CD013577 (see www.cochranelibrary.com for information). Cochrane Reviews are regularly updated as new evidence emerges and in response to feedback, and Cochrane Database of Systematic Reviews should be consulted for the most recent version of the review.
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14%. While prognosis is generally favorable, after four years more than a half of patients reported symptoms (Tubach et al., 2004). Epidural corticosteroid injection is one of the most common non-surgical procedure for lumbosacral radicular pain (Manchikanti et al., 2012). It consists in injecting corticosteroid directly in the epidural space in order to relieve pain and eventually limit resultant disability.

Epidural corticosteroid injections for lumbosacral radicular pain

(Oliveira CB, Maher CG, Ferreira ML, Hancock MJ, Oliveira VC, McLachlan AJ, Koes BW, Ferreira PH, Cohen SP, Pinto RZ, 2020)

2. Objective

The aim of this Cochrane Review was to investigate the efficacy and safety of epidural corticosteroid injections compared with placebo injection on pain and disability in patients with lumbosacral radicular pain.

3. What was studied and methods

A comprehensive search of the following databases up to 25 September 2019 was performed: Cochrane Back and Neck group trial register, CENTRAL, MEDLINE, Embase, CINAHL, PsycINFO, International Pharmaceutical Abstracts, and two trial registers. The population addressed in this review was patients suffering from lumbosacral radicular pain. The interventions studied was epidural corticosteroid injections, compared to placebo injections. The primary outcomes studied were leg pain measured by Visual Analogue Scale (VAS) and disability measured by self-reported questionnaire (e.g. Oswestry Disability Index or Roland-Morris Disability Questionnaire). Secondary outcomes included overall and back pain intensity, percentage of patients who had pain relief, percentage of patients with disability reduction from baseline, and adverse events measured by the proportion of patients reporting any untoward medical occurrence after an epidural corticosteroid injection.

4. Results

The review included 25 studies with a total of 2740 participants.

The review shows that:

- Epidural corticosteroid injections were probably slightly more effective compared to placebo injection for reducing leg pain at immediate follow-up (MD –15.0, 95% CI –25.88 to –4.12 on a 0 to 100 scale; 1 trial, 158 participants; moderate-quality evidence) and at short-term follow-up (MD –4.93, 95% CI –8.77 to –1.09 on a 0 to 100 scale; 8 trials, 949 participants; moderate-quality evidence). Epidural corticosteroid injections probably have no effect compared to placebo injection for reducing leg pain at intermediate follow-up (MD 9.10, 95% CI –1.44 to 19.64 on a 0 to 100 scale; 1 trial, 158 participants; moderate-quality evidence) and at long-term follow-up (MD –0.35, 95% CI –6.23 to 5.53 on a 0 to 100 scale; 3 trials, 453 participants; moderate-quality evidence).
- Epidural corticosteroid injections probably have no effect compared to placebo injection in reducing disability at immediate follow-up (SMD 0.08, 95% CI –0.17 to 0.33; 2 trials, 243 participants; very low quality evidence) and long-term follow-up (SMD –0.14, 95% CI –0.38 to 0.10; 7 trials, 882 participants; low quality evidence). Epidural corticosteroid injections were probably slightly more effective compared to placebo injection for reducing disability at short-term follow-up (SMD –0.27, 95% CI –0.39 to –0.14; 12 trials, 1367 participants; moderate-quality evidence) and at intermediate follow-up (SMD –0.20, 95% CI –0.40 to –0.01; 6 trials, 866 participants; low quality evidence).
- It is uncertain whether epidural corticosteroid injections result in an increased risk of minor adverse events (risk ratio (RR) 1.14, 95% CI 0.91 to 1.42; 8 trials, $n = 877$; very low quality evidence). Most studies did not report the timing of possible adverse events, and just reports adverse events the authors considered related to treatment. Only one study reported a major drug reaction: one patient on anticoagulant therapy had a retroperitoneal haematoma as a complication of the corticosteroid injection.

5. Conclusions

The authors concluded that epidural corticosteroid injection were probably slightly more effective than placebo for leg pain and disability at short-term follow up, with only minor adverse effects, and it was uncertain if there were differences in frequency of

adverse effects. However, treatment effects are small and might not be considered clinically significant by clinicians and patients.

6. Implications for practice in neurorehabilitation

Taken together, the evidence included in the review suggests an effect of epidural corticosteroid injections on short-term pain and disability, but at the same time warns both clinicians and patients that the effect might be small, and even not clinically significant. Clinicians should inform patients about the small effect size of this specific treatment. Furthermore, the review by Oliveira et al. suggests that adverse events are mostly minor and it is uncertain if there are differences in that regard between epidural and placebo injections. Unfortunately, evidence about safety is still of very low quality, and further studies are needed to clarify both efficacy and safety of epidural corticosteroid injections.

Conflict of interest

The author declares no conflicts of interest.

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