Efficacy of Cervical Epidural Steroid Injections for Cervical Radiculopathy

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Sir,

Cervical radiculopathy (CR) is a relatively common disorder manifested with neck pain, radicular arm pain, at times associated with neurological signs (paraesthesia, reduced muscle strength, reduced/absent reflexes). Commonly, it results from nerve root dysfunction, secondary to mechanical compression; although cytokines released from damaged intervertebral disks are also responsible. A diagnosis is established from a thorough history, physical examination corroborated by the findings from magnetic resonance imaging (MRI). CR is typically self-limiting with up to 90% of patients achieve symptomatic improvement with conservative management (immobilization, anti-inflammatory medications, physical therapy, cervical traction, and epidural steroid injections)1. Cervical epidural steroid injections (CESI) is an effective non-surgical treatment option to manage severe radicular pain2. However evidence supporting the effectiveness of CESI is relatively weak because of a lack of prospective randomized studies3. We performed this prospective study to evaluate the effectiveness of CESI in patients with CR secondary to a single level herniated intervertebral disc.

Following approval from the Institutional Review Board, and obtaining informed consent from the individual patients, thirty one adult patients (18 male, 13 female) aged between 35-67 years presented with CR and MRI showing a single level herniated intervertebral disc underwent CESI in this prospective study. The anatomical level of prolapsed disc was: C3-C4 in 3, C4-C5 in 8, C5-C6 in 9 and C6-C7 in 11 patients. The duration of symptoms were between 6-72 weeks (mean 30.4 weeks). Patients with significant functional deficits, severe systemic disease, and those with coagulopathy were excluded. All patients received a single dose of CESI using blind midline inter-laminar technique at the same level of the affected intervertebral disc. A mixture of methylprednisolone acetate (80 mg) and preservative free bupivacaine (2.5 mg) diluted to total volume of 4 ml by addition of 0.9% saline was administered in all patients. The outcome variables were the extent of pain relief immediately following the procedure and thereafter at 1, 3 and 6 months using visual analogue scale (VAS) and numeric rating scale (NRS). CESI was repeated if at any point during the follow up period VAS was greater than 5, and referred for surgery if VAS >7, had...
motor deficits or patient opted for surgery. Mean VAS was 8.7 pre CESI, 0.8 immediately following CESI, and thereafter 1.8, 3.9 and 3.8 at 1, 3 and 6 months respectively. As per NRS all patients had complete pain relief following CESI (mean 94%), and thereafter 78%, 60% and 58% at 1, 3 and 6 months respectively. No complication was noted in any patient, except local pain at injection site. Five patients needed repeat CESI and 3 out of them needed surgery.

The findings of this study indicate that CESI is an effective and safe treatment option to consider in selected patients with CR secondary to disc herniation to reduce the pain and could avoid surgical intervention. We recommend that the procedure should only be performed by experienced anesthesiologists. Although safe in experienced hands, rare catastrophic complications like spinal cord trauma and spinal cord hematoma have been reported following CESI; however fortunately seldom encountered following interventional procedures in the cervical spine.

References

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The neuromuscular blockade is required within 24 hours of BRIDION administration, a neuromuscular blocking agent should be used instead of rocuronium or vecuronium. The most commonly reported adverse reactions were dysgeusia (metal or bitter taste) and anesthetic complications (movement, coughing, stimulation, or searing of the endotracheal tube). Impatiences treated with BRIDION, a few cases of awareness were reported. The relation to BRIDION was uncertain. In a few individuals, allergic-like reactions (i.e., flushing, erythematous rash) following BRIDION were reported. Conicians should be prepared for the possibility of allergic reactions and take the necessary precautions. In a trial of patients with a history of pulmonary complications, bronchospasm was reported in 2 patients and a causal relationship could not be fully excluded.

Volunteer studies have demonstrated a slight (11%-22%) and transient (<34 minutes) prolongation of the prothrombin time/activated partial thromboplastin time (PT/APTT) with BRIDION; however, clinical studies have demonstrated no clinically relevant effect on pre- or postoperative bleeding complications with BRIDION alone or in combination with anticoagulants. As BRIDION has demonstrated an in vitro pharmacodynamic interaction with anticoagulants, caution should be exercised. In patients on anticoagulants for a pre-existing or concomitant condition. This pharmacodynamic interaction is not clinically relevant for patients receiving routine postoperative prophylactic anticoagulation. Although formal interaction studies have not been conducted, no drug interactions were observed in clinical trials. Preclinical data suggest that clinically significant drug interactions are unlikely with the possible exception of terfenadine, histamine, and hormonal contraceptives.

³ time-of-fear
² posttetanic count
¹ second twitch


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