

## Original Research Article

# EVALUATION OF EFFICACY OF CAUDAL EPIDURAL STEROID INJECTIONS IN PATIENTS OF CHRONIC LOW BACK PAIN AT A TERTIARY CARE CENTRE

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**ABSTRACT**

**Background:** Low back pain is a huge health problem in all countries and is most commonly treated in primary healthcare settings. Caudal epidural injection is one of the commonly used minimally invasive modalities in the management of acute as well as chronic low backache conditions. Hence; under the light of above-mentioned data, the present study was undertaken for assessing efficacy of caudal Epidural injection in treating patients with chronic low back pain.

**Materials & Methods:** A total of 50 patients were enrolled. All the patients received dose normal saline 10 ml + bupivacaine (0.5%) 8 ml + methylprednisolone (80mg) 2 ml. Inclusion criteria for the present study included age between 20 to 60 years, Back pain with no relief after twelve weeks of conservative therapy, Magnetic resonance imaging (MRI) evidence of herniated nucleus pulposus at level corresponding with symptoms like radicular pain and clinical findings. The main points recorded included Age, sex, Oswestry Disability Index (ODI) score, Visual Analogue Scale (VAS) score, clinical and MRI diagnosis. Three caudal epidural injections were given at an interval of three weeks and on each visit ODI and VAS score was recorded in the case sheet.

**Results:** Mean VAS at pre-injection, post-third injection, 3 months, 6 months, 9 months and 1 year was 6.8, 4.4, 4.0, 3.6, 3.7 and 3.5 respectively. There was a significant reduction in mean VAS at different time intervals. Mean ODI score at pre-injection, post-third injection, 3 months, 6 months, 9 months and 1 year was 43.2, 35.3, 25.2, 18.3, 30.7 and 31.2 respectively. There was a significant reduction in mean ODI at different time intervals.

**Conclusion:** Caudal epidural injections were effective in providing pain relief in patients with low back pain. After time period of 6 months post-third injection, decline in the efficacy of caudal epidural injections started appearing.

**Keywords:** Chronic Low Back Pain, Caudal, Epidural.

**INTRODUCTION**

Low back pain is a huge health problem in all countries and is most commonly treated in primary healthcare settings. It is usually defined as pain, muscle spasm, or stiffness localised below the costal margin and above the inferior gluteal folds, with or without leg pain (sciatica). The most important

symptoms of non-specific low back pain are pain and disability.<sup>[1-3]</sup>

The evidence that non-steroidal anti-inflammatory drugs relieve pain better than placebo is strong. Advice to stay active speeds up recovery and reduces chronic disability. Muscle relaxants relieve pain more than placebo, but the side effects such as drowsiness may occur. Conversely, strong evidence suggests that bed rest and specific back exercises

(strengthening, flexibility, stretching, flexion, and extension exercises) are not effective. These interventions mentioned were as effective as a variety of placebo, sham treatment, or no treatment at all. Corticosteroids are routinely used in the treatment of chronic low back pain. They suppress the biochemical factors of inflammation and hence reduce the pain.<sup>[11]</sup> Corticosteroid injected through epidural route are methylprednisolone acetate and triamcinolone acetonide admixed with local anesthetic.<sup>[4-6]</sup>

Caudal epidural injection is one of the commonly used minimally invasive modalities in the management of acute as well as chronic low backache conditions. Most of the systematic reviews have been done on epidural steroidal injection by comparing the various routes of administration and showed better results with caudal epidural injection in chronic low back ache syndromes.<sup>[7]</sup> Hence; under the light of above-mentioned data, the present study was undertaken to assess efficacy of caudal Epidural injection in treating patients with chronic low back pain.

## MATERIAL AND METHODS

The present study was conducted to assess the efficacy of caudal Epidural injection in treating patients with chronic low back pain. A total of 50 patients were enrolled. All the patients received dose normal saline 10 ml + bupivacaine (0.5%) 8 ml + methylprednisolone (80mg) 2 ml. Inclusion

criteria for the present study included age between 20 to 60 years, Back pain with no relief after twelve weeks of conservative therapy, Magnetic resonance imaging (MRI) evidence of herniated nucleus pulposus at level corresponding with symptoms like radicular pain and clinical findings. The main points recorded included Age, sex, Oswestry Disability Index (ODI) score, Visual Analogue Scale (VAS) score, clinical and MRI diagnosis. Three caudal epidural injections were given at an interval of three weeks and on each visit ODI and VAS score was recorded in the case sheet. All the results were recorded on a Microsoft excel sheet and were analysed by SPSS software. Chi- square test and student t test was used for assessment of level of significance. P- value of less than 0.05 was taken as significant.

## RESULTS

The mean age of the patients was 43.8 years. Majority proportion of patients were males. Mean VAS at pre-injection, post-third injection, 3 months, 6 months, 9 months and 1 year was 6.8, 4.4, 4.0, 3.6, 3.7 and 3.5 respectively. There was a significant reduction in mean VAS at different time intervals. Mean ODI score at pre-injection, post-third injection, 3 months, 6 months, 9 months and 1 year was 43.2, 35.3, 25.2, 18.3, 30.7 and 31.2 respectively. There was a significant reduction in mean ODI at different time intervals.

**Table 1: Comparison of mean VAS**

Time interval	Mean	p-value
Pre-injection	6.8	0.001 (Significant)
Post- third injection	4.4	
3 months	4.0	
6 months	3.6	
9 months	3.7	
1year	3.5	

**Table 2: Comparison of ODI score**

Time interval	Mean	p-value
Pre-injection	43.2	0.000 (Significant)
Post- third injection	35.3	
3 months	25.2	
6 months	18.3	
9 months	30.7	
1year	31.2	

## DISCUSSION

Low back pain is a problem that is common and costly to society, and its effective management remains a challenge. It is a common global problem and according to the Centers for Disease Control and Prevention (CDC), it is the one of the leading causes of disability among adults. Clinical information is the leading element that drives the initial impression, while magnetic resonance imaging (MRI) should be considered only in the presence of clinical elements that are not definitely

clear or in the presence of neurological deficits or other medical conditions. The current mainstay of conservative therapy includes the use of nonsteroidal anti-inflammatory drugs (NSAIDs), acetaminophen, muscle relaxants, or even a short course of opioid pain medication in conjunction with non-pharmacological strategies such as physical therapy, all of which lead to improvement in a majority of patients. However, if conservative therapy does not provide symptomatic relief, or if pain persists as moderate-to-severe ( $\geq 4/10$  on a numeric pain rating scale), more invasive treatments

such as epidural steroid injections, facet injections, and radiofrequency ablations are generally considered.<sup>[7-10]</sup> Hence; under the light of above-mentioned data, the present study was undertaken for assessing efficacy of caudal Epidural injection in treating patients with chronic low back pain. The mean age of the patients was 43.8 years. Majority proportion of patients were males. Mean VAS at pre-injection, post-third injection, 3 months, 6 months, 9 months and 1 year was 6.8, 4.4, 4.0, 3.6, 3.7 and 3.5 respectively. There was a significant reduction in mean VAS at different time intervals. Mean ODI score at pre-injection, post-third injection, 3 months, 6 months, 9 months and 1 year was 43.2, 35.3, 25.2, 18.3, 30.7 and 31.2 respectively. There was a significant reduction in mean ODI at different time intervals. Bhatti AB evaluated the efficacy of the different types of epidural injections (EI) to prevent surgical intervention in patients suffering from chronic sciatica due to lumbar disc herniation (LDH). Studies were identified by searching PubMed, MEDLINE, and Google Scholar to retrieve all available relevant articles. Significant improvement in the pain scores and functional disability scores were observed. Additionally, greater than 80% of the patients suffering from chronic sciatica caused by LDH could successfully prevent surgical intervention after EI treatment with or without steroids. They concluded that EI provides new hope to prevent surgical intervention in patients suffering from sciatica caused by LDH.<sup>[10]</sup> Taheri A et al evaluated the effectiveness of percutaneous epidural adhesiolysis (PEA) in patients with low back pain due to contained disc herniation. Twenty patients with low back pain due to contained disc herniation underwent PEA treatment with the Racz technique. The patients were evaluated for pain score, medication intake, significant pain relief, and complications. At three days, one month, three months, and six months after PEA compared to pre-PEA evaluations, the pain scores and medication intake were significantly decreased. Significant pain relief declined from 95% at three days to 75% at six months. It was concluded that PEA for low back pain due to contained disc herniation is a safe and effective procedure. Therefore, it may be considered as an option for treatment before invasive operations are performed.<sup>[11]</sup> Billy GG et al evaluated and determined whether demographic, comorbid factors, or physical examination findings may predict the outcome of caudal epidural steroid injections in managing patients with chronic low back pain and radiculopathy. For each week of the duration of symptoms, the percentage of improvement decreased by 0.07%. Regarding physical

examination findings, presence of pain with lumbar extension was negatively and significantly related to length of relief duration with a P-value of 0.0124. The mean length of relief duration is 38.37 weeks for individuals without painful lumbar extension and 14.68 weeks for individuals with painful lumbar extension. It was concluded that the mean length of relief following a caudal injection is reduced by 62% in patients who exhibit pain with lumbar extension.<sup>[12]</sup>

## CONCLUSION

Caudal epidural injections were effective in providing pain relief in patients with low back pain. After time period of 6 months post-third injection, decline in the efficacy of caudal epidural injections started appearing.

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