



## CAUDAL EPIDURAL STEROIDS; OUTCOME IN LUMBER DISC HERNIATION

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**ABSTRACT... Introduction:** About 85% of the population experience low back pain during adulthood and annual incidence is 5 to 15% with no gender discrimination. **Design:** Quasi intervention experimental study. **Setting:** DHQ teaching Hospital & at Fazil Memorial Hospital Gujranwala. **Period:** November 2010 to November 2012 (two years). **Material & Methods:** Hundred patient fulfilling the inclusion criteria with SYMPTOMATIC LUMBER DISC herniation were selected. Efficacy was determined by improvement in Denis Pain scale and Mcnab's functional criteria. Safety was determined by absence / rareness of complications i.e spinal anesthesia, transient hypotension, and paresthesia, difficulty in voiding, infection and meningitis. Follow up was weekly for 6 weeks **Results:** Out of hundred cases 53 were gents and 47 were ladies. Mean age was 37.56 (22-50 yrs). Maximum cases 72% were in third decade of life. Maximum pain relief was noted after three weeks of first injection, 72% of the cases were either having no or mild pain. Functional recovery was excellent in 44% and good in 40% of the patients. Complications were fewer and mild, Spinal anesthesia in 2%, transient hypotension in 3%. Paresthesia in 8% and 10% of the patient developed supra pubic fullness but only one needed catheterization. Infection and meningitis was not observed in any case. **Conclusions:** Caudal epidural steroids injection is safe & effective mode of treating lumbar disc herniation.

**Key words:** Caudal epidural steroids, disc herniation, effective, safe.

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### INTRODUCTION

About 85% of the population experience low back pain during adulthood and annual incidence is 5 to 15% with no gender discrimination.<sup>1</sup> It is the commonest cause of limitation of activities in people younger than 45 years. It is also one of the commonest reasons for seeking medical advice. It accounts for 15% of all the sick leaves in developed countries. It is the commonest illness after common cold.<sup>2,3</sup> Majority of the patients have herniated disc at single level either at L4-L5 or L5-S1 (90.6%).<sup>4</sup> Disc herniation is an ageing process and is due to the combination of spinal instability & dysfunction. The pain is self limiting and majority improves without any treatment.<sup>5</sup> The treatment of herniated disc is symptomatic and none is curative. Conservative treatment with rest, analgesics, physiotherapy, and life style modification is advised. If this fails then epidural steroids or surgery can be offered.<sup>6</sup> Epidural steroids have the advantage of simplicity, cost

effectiveness, minimum invasiveness. It is a method of crises intervention and prognosticator.<sup>7</sup> Caudal epidural can be given by many routes e.g fluoroscopy, spinal endoscopy or via surface anatomy. Hiatus foramen approach is safe, simple and most commonly used technique.<sup>6</sup>

### MATERIALS AND METHODS

Study was conducted at DHQ Teaching Hospital Gujranwala & at Fazil Memorial Hospital, Gujranwala between November 2010 to November 2012 (2 years).

It was a quasi intervention experimental study with convenient non probability sampling. Patient between twenty to fifty years of ages having MRI proven disc were selected. Patients with sequestered disc, Cauda equina syndrome, having history of congestive cardiac failure, bleeding disorder, infection or spinal anomaly were excluded from study. After taking informed

consent patient was booked for the study & findings were noted on a specified Performa. Demographic information i.e age, sex, Chief complaint, side of radiculopathy, pain severity (Denis Pain Scale), Functional activity (Mcnab functional criteria) and type of disc were noted. Steroid injection having triamcilonone 80mg mixed with Bupivacaine 5ml was injected through hiatus foramen. Procedure was carried out in out patient room fully equipped with resuscitation facilities. Upto three injections with one week interval can be given depending upon the need. Patient was observed there for two hours for any procedural complication i.e spinal anesthesia, hypotension, parestheria, difficulty in voiding, infection& meningitis. Follow up plan was weekly for six weeks.

Efficacy was determined by improvement in Mcnab's criteria & Denis pain scale. Safety was determined by absence or rareness of complications. Spinal anesthesia was documented when feeling of numbness, difficulty in moving limbs and sensory impairment occurred. A fall of systolic blood pressure 10 mm of Hg before and after injection with palpitation, dizziness or headache was noted as hypotension. Paraesthesia was determined by the subjective feeling of the patient. Difficulty in voiding was documented when patient was unable to pass urine two hours after injection and on abdominal examination bladder was palpable. Infection was recorded when there was local & systemic signs of inflammation i.e redness, swelling & fever developed up to three days after injection. Meningitis was considered if patient developed fever, headache, Neck stiffness with positive kerning and Brudzinski sign within one week after injection. Data was analyzed by using SPSS version 10. p.value $\leq$ 0.05 was taken as significant.

## RESULTS

53 patients were male & 47 were female (figure-I), mean age was 37.56 (22-50 years). Maximum patient, 72 were in third decade of Life (31-40 years) (figure-II). Chief presenting complaint was low back pain with radiculopathy 68. Left radiculopathy was noted in 38 cases and 30 cases

developed right radiculopathy, while in 14 of the case pain was localized. 8 cases were having both sided radiation. 10 cases presented with involved neurology (figure-III). Type of disc was also recorded. 40 presented with disc bulge, 48 with protrusion & 12 had extruded disc. Majority of the patients having disc lesion at single level either at L5/S1, or L4/L5. Only 8 cases had disc at other level.

Complications were few and mild. Spinal anesthesia was noted in two cases, hypotension in three, Paresthesia in eight while ten cases developed supra pubic fullness but only one needed catheterization. No case of infection or meningitis was noted. Pain severity was assessed by using Denis Pain scale (table-I) and patients were graded from P<sub>1</sub> (No Pain) to P<sub>5</sub> (Constant Pain). At the start of treatment 11 cases were having minimum pain P<sub>2</sub>, 44 moderate pains P<sub>3</sub>, 30 severe pain P<sub>4</sub> & 15 constant pains P<sub>5</sub>. At the last follow up (six week after the first injection) Sixteen 16 patient had no pain P<sub>1</sub>, fifty six 56 minimal pain P<sub>2</sub>, Eighteen 18 moderate pain P<sub>3</sub>, six 6 severe pain P<sub>4</sub>, & four 4 had constant pain P<sub>5</sub> (figure-IV). Mcnab's functional criteria was used to assess the functional limitation due to disc lesion (table-II).

Patients were graded as excellent, good, fair or poor. At the start of our study no patient was in excellent category, Five 05 were in good category, Sixty 60 were in fair & thirty five 35 were in poor category,. At the end of study, forty four 44 were in excellent group, good & fair was forty 40 and fourteen 14 respectively. Only two cases have no improvement and remained in poor group (figure-V).

Gender Distribution

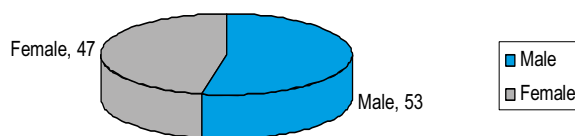


Figure-I. (Gender Distribution)

Age Distribution

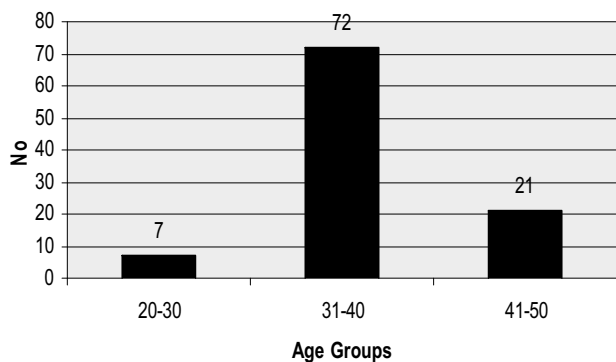


Figure-II. (Age Distribution)

Functional improvement (McNab's Criteria):

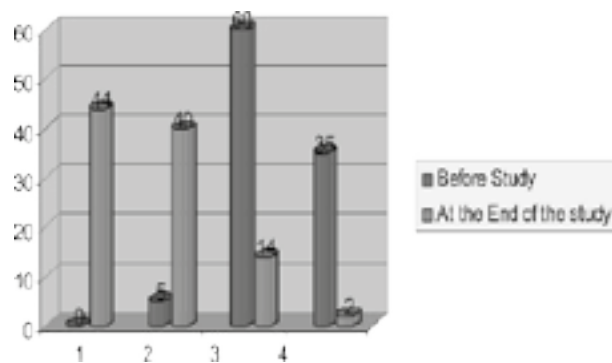


Figure-V. (Functional improvement (McNab's Criteria))

Clinical Presentation:

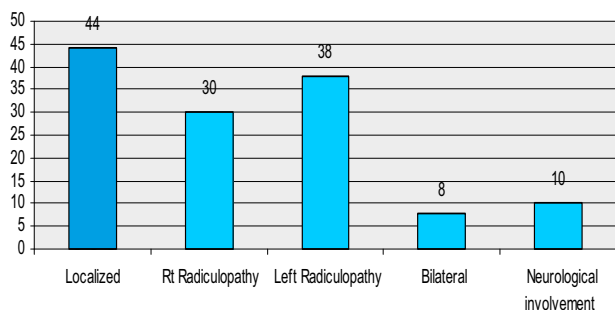


Figure-III. (Clinical Presentation)

<b>P1</b>	No pain.
<b>P2</b>	Occasional mild pain, not requiring medication.
<b>P3</b>	Moderate pain; occasional use of medication, not precluding the performance of professional or daily activities.
<b>P4</b>	Moderate to severe pain; occasional job absence
<b>P5</b>	Continuous severe pain; use of chronic medications for pain

Table-I. Denis' pain scale

Grade	Description
Excellent	Free of pain, no restriction of mobility, able to return to normal work and activities
Good	Occasional non radicular pain, relief of presenting symptoms, able to return to modified work
Fair	Some improved functional capacity, still handicapped and/or unemployed
Poor	Continued objective symptoms of root involvement, additional operational intervention needed.

Table-II. McNab's Functional Criteria

**DISCUSSION**

Epidural steroids are considered when conservative measures fail. These are low risk alternatives to surgery and are effective in patients with symptoms upto three years. These also have the advantage of simplicity, cost effacements minimally invasiveness.<sup>7</sup> Our study showed that disc lesions have no gender distribution with its peak incidence in third decade of life. This finding was also confirmed by Coste J et al<sup>5</sup> and Richard<sup>9</sup> et al in separate studies who showed

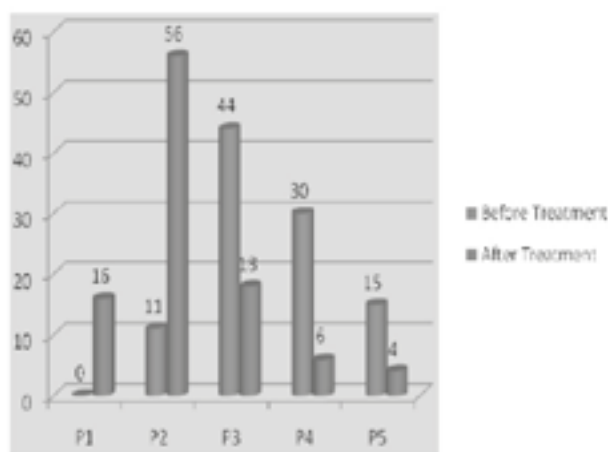


Figure-IV. (Pain improvement, Denis Pain Scale)

that backache affects male and female equally.<sup>9</sup>

In our study disc bulge was seen in 40% of the cases. In a study of Rosenberg et al<sup>10</sup>, the bulge was found in 42% of the patients. Our study proved that majority of the lesions are at single level, either at L5/S1 or L4/L5. This was also confirmed by many researchers.<sup>9,11</sup> In our study complications were few and mild. Botwin et al<sup>13</sup> in a study showed perioperative complication 15.6% per injection. All reaction resolved without morbidity and no patient required hospitalization.<sup>13</sup>

In our study Denis pain scale was used to document pain improvement, higher the grade, worse the outcome. At final follow up no pain P 1, Mild pain P2, Moderate pain P3, severe pain P4 constant pain P5 scores were 16%, 56%, 18%, 06% and 04% respectively. Koichiro et al<sup>14</sup> reported 39%, 43%, 13%, 7% and 4% as no pain, mild pain, moderate pain, severe pain and constant pain at final follow up respectively. Epidural steroids are widely used to treat backache. According to manchikant et al<sup>15</sup> there was a significant improvement in patient receiving epidural injections. Pampativ et al<sup>16</sup> also concluded that at one month 96% of the patient showed satisfactory improvement. We used Mcnab's criteria to assess the functional outcome of steroids. Our study showed excellent, good and fair results in 44%, 40% and 14% of the subjects respectively while 02% had poor response. Run et al<sup>17</sup> evaluated that at the end of 3 months good results were seen in 39% and fair in 33%. BanaszKiewicz<sup>18</sup> concluded that 41% of the patients had either an excellent or good response to caudal epidural injections. According to Apathty et al<sup>19</sup> radiculopathy showed better improvement with injection than localized lumbar pain. Weinstein JN<sup>20</sup> also recommended that a trial of epidural injections can be given. This has a prognostic value for surgery.

## CONCLUSION

Caudal epidural steroid injections are safe and effective treatment for lumbar disc herniation.

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## REFERENCE

1. Anderson GBJ. **Epidemiologic aspects of low back pain in industry.** Spine 1981; 6: 53-60.
2. Jooma R. Memon R. **A practical approach to the management of low back pain.** Pak J Med Sci 2001; 17: 197-202.
3. Babu MKV. **Surgical management of lumbar disc prolapse by fenestration technique.** J Orthopaedics 2006; 3: e6.
4. Ahmad M, Ahmad N, Raja I A. **Lumbar intervertebral disc herniation: age distribution and pattern of herniation.** Ann King Edward Med Coll 1999; 5: 85-7.
5. Coste J, Delecoeuillerie G, Cohen de Lara A, Parc JM, Paolaggi Jb. **Clinical course and prognostic factors in acute low back pain: an inception cohort study in primary care practice.** Br Med J 1994; 308:577-80.
6. Canale ST. **Lower back pain and disorders of intervertebral disc.** Campbell's Operative Orthopaedics. 11<sup>th</sup> ed. New York: Bosby; 2008: 1957-2003.
7. Glenn R, Butterman. **Treatment of lumbar disc herniation: epidural steroid injection compared with discectomy.** J Bone Joint Surg 2004; 86: 670-9.
8. Dashfield AK, Taylor MB, Cleaver Js, Farrow D. **Comparison of caudal steroid epidural with targeted epidural steroid placement during spinal endoscopy.** Br J Anaesth 2005; 94: 514-9.
9. Richard AD, James N, Weinstein. **Low Back pain.** N Engl J Med 2001: 363-370.
10. Rosenberg SK, Grabinsky A, Kooser C, Bswell MV. **Effectiveness of transforaminal epidural steroid injections in low back pain: one year experience.** Pain Physician 200; 5: 266-70
11. Solmon L, Warwick D, Nayagam S. **The Back. Apley's system of orthopedics and fractures.** 9<sup>th</sup> ed. Hodderarnold; 2010:453-91.
12. Janna CF, Bryan AC, Judith At e tal. **A randomized trial of epidural corticosteroid injections for spinal stenosis.** N Engl J Med; 371:11-21
13. Botwin KP, Gruber RD, Bouchlas CG, Torres-Ramos FM, hanna A, Rittenberg J, et al. **Complications of fluoroscopically guided caudal epidural injections.** Am J Phys Med Rehabil 2001; 80: 416-24.
14. Koichiro O, Tadato K, Eiki U, Mitsuho C. **PLIF with a titanium Cage and Excised Facet Joint Bone for Degenerative Spondylolisthesis-In Augmentation With a Pedicle Screw.** J Spinal Disorder Technique 2007; 20:53-9.

15. Manchikanti L, Singh V, Rivera JJ, Pampati V, Beyer C, Damron K, et al. **Effectiveness of caudal epidural injections in discogram positive and negative chronic low back pain.** Pain Physician 2002; 5: 18-29.
16. Pampati V, Rivera JJ, Beyer C, Damron KS, Barnhill RC. **Caudal epidural injections with sarapin or steroids in chronic low back pain.** Pain physician 2001; 4:322-35.
17. Runu R, Sinha NK, Pai R, Shankar PR, Vijayabhaskar P. **Our experience with epidural steroid injections in management of low back pain and sciatica.** Kathmandu Univ Med J (KUMJ) 2005; 3:349-54.
18. Banaszkiwicz PA, Kadar D, Wardlaw D. **The role of caudal epidural injections in the management of low back pain.** Bull Hosp Jt Dis 2003; 61: 127-31.
19. Apathy A, Penczner G, Licker E, Fiben A, Balint G, Genti G, et al. **Caudal epidural injection in the management of lumbosacral nerve pain syndromes.** Orv Hetil 1991; 140: 1055-8.
20. Weintein JN, Tosteson TD, Lurie JD, Tosteson ANA, Hanscom B, Skinner JS, Abdul WA, et al. **Surgical vs nonoperative treatment for lumbar disc herniation.** JAMA 2006; 296: 2441-50.




“Some people aren't loyal to you,  
they are loyal to their need of you.  
Once their need changes,  
so does their loyalty.”

Unknown



#### AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Dr. Malik M. Yasin Awan	Data collection and analysis	
2	Dr. Muhammad Amjad	Data collection and analysis	