

Functional Outcome of Lowbackache Managed by Epidural Steroidinjection

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Abstract

Background: Low backache is one of the common condition encountered in day to day practice. 85% of general population experience backache in their lifetime. The incidence is common next only to headache. Limiting activity levels, recurrence of symptoms, psychological stress, loss of wages are of primary concern. **Methods:** This is a prospective study on 100 low back ache patients who underwent epidural steroid injection. Painscaling was done before performing the procedure, and on 2nd day, after 2 weeks, after 2 months and after 6 months of the procedure and compared with the previous results. **Results and Conclusion:** Patients had a good relief from the pain immediately following the injection. But the pain gradually worsened on subsequent follow ups. The effect of epidural steroid injection decreases with time. The epidural steroid injections is simple, safe, minimally invasive, economical and effective mode of early pain relief of low-back and radicular pain. It improves the functional status and decreases the severity of pain.

Keywords: Low Back Pain; Conservative Management; Epidural Steroid Injection.

Introduction

Low backache is one of the common condition encountered in day to day practice. 85% of general population experience backache in their lifetime. The incidence is common next only to headache. Limiting activity levels, recurrence of symptoms, psychological stress, loss of wages are of primary concern[1]. Impairment of the back and spine are ranked as the most frequent cause of limitation of activities in people of all age groups. Epidural injection of corticosteroids is one of the most commonly used interventions in managing chronic low back pain with or without lower extremity radiation [2,3]. Steroids presumably exert their effects by limiting inflammatory response. Local anaesthetics are advantageous in providing temporary pain relief by means of analgesic effects exerted by blocking nerve conduction and

suppressing ectopic signal [4].

Aims of the Study

This study was conducted in order to determine

1. The safety and efficacy of epidural steroid injection in the treatment of low back pain.
2. The complications of epidural steroid injection.
3. The reduction in use of analgesics or other modalities to relieve low back pain.

Inclusion Criteria

1. Patients of low back pain associated with or without radiculopathy who are not relieved by conservative management and who are not candidates or willing for spinal surgery.
2. Age >18 years and < 70 years.
3. Pain > 4 weeks but < 6 months in duration.

Exclusion Criteria

1. Patients with progressive motor deficit
2. Patients with multi-level degenerative spine disease, unstable spine, vertebral compression

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fractures, spondylolisthesis, cauda equina syndrome and arachnoiditis.

- 3. Previous lumbar spine surgeries or epidural steroid injections.

Materials and Methods

In this prospective study done during January 2015 to August 2016 in a tertiary care orthopaedic

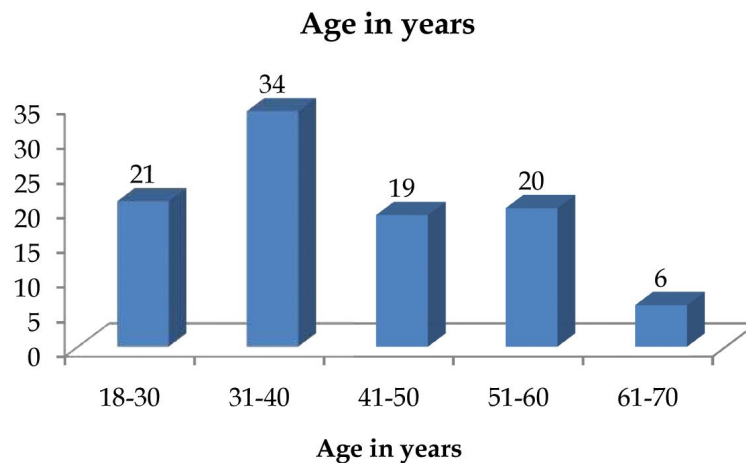
centre, 100 patients was evaluated and followed up according to the protocol.

A detailed history including age of patient, occupation, duration, location, type, radiation, intensity of pain, aggravating and relieving factors, history of trauma is obtained and examined. Suitable candidates were suggested epidural steroid injection for the management of low back pain. The procedure was conducted with the help of an anaesthetist and 80 mg of depomedrol was injected to the epidural space.

Results and Analysis

Table 1: Age in years

Age Group	Number of Cases	Percentage
18-30	21	21%
31-40	34	34%
41-50	19	19%
51-60	20	20%
61-70	6	6%
Total	100	100%

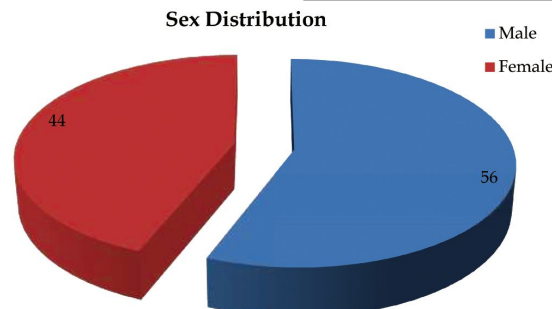


Graph 1: Age in years

The highest number of cases were between 31-40 years of age group, total 34 patients. The least cases were of age group 61-70, 6 cases only. The mean age of the study group was 41.82 years.

Table 2: Sex

	Frequency	Percentage
Male	56	56%
Female	44	44%
Total	100	100%

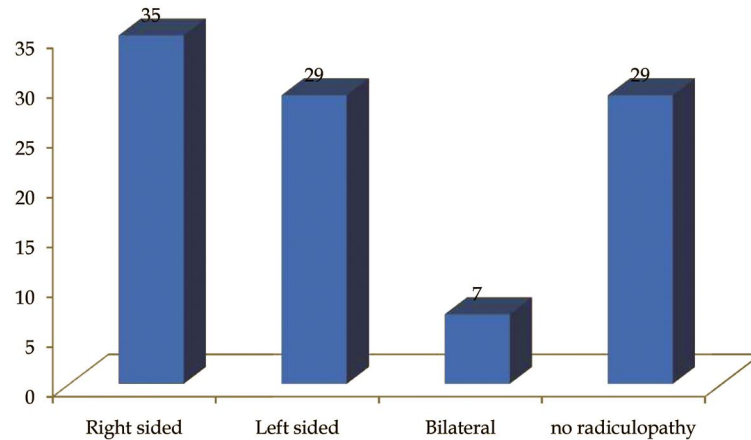


Graph 2: Sex Distribution

56% of patients were male whereas 44% are females

Table 3: Side of Radiculopathy

	Frequency	Percentage
Right sided	35	35%
Left sided	29	29%
Bilateral	7	7%
No radiculopathy	29	29%
Total	100	100%



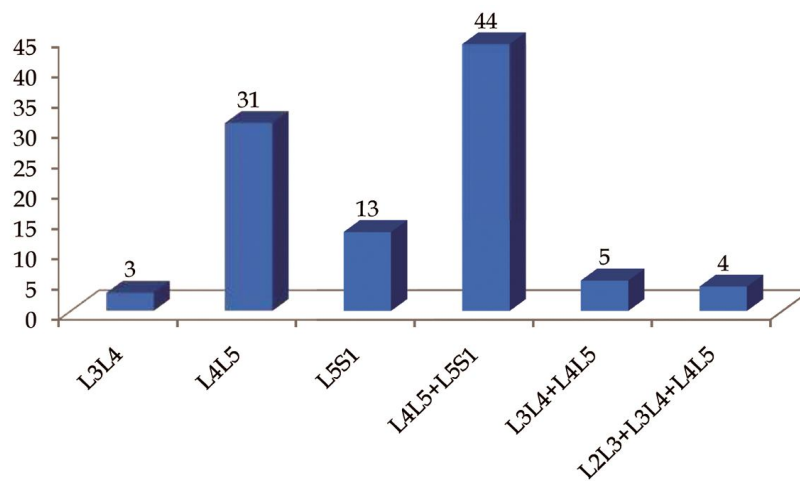
Graph 3: Side of Radiculopathy

35 patients had right sided radiculopathy, 29 left sided radiculopathy, 7 bilateral radiculopathy and

29 patients didn't have any symptoms of radiculopathy.

Table 4: Level of disc lesion

Level of disc lesion	Frequency	Percentage
L3L4	3	3%
L4L5	31	31%
L5S1	13	13%
L4L5+L5S1	44	44%
L3L4+L4L5	5	5%
L2L3+L3L4+L4L5	4	4%
Total	100	100%



Graph 4: Level of disc lesion

3 patients had disc lesions at L3L4 level, 31 patients had at L4L5 level, 13 patients had at L5S1, 44 patients had at L4L5+L5S1 level, 5 patients had at L3L4+L4L5

level and only 4 patients had disc lesion at L2L3+L3L4+L4L5 level.

Table 5: Occupation

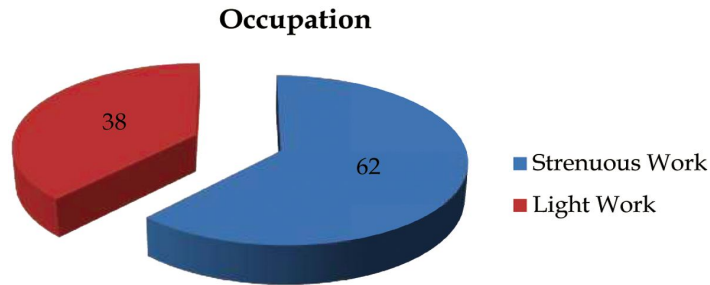
	Frequency	Percentage
Strenuous Work	62	62%
Light Work	38	38%
Total	100	100%

Strenuous work includes manual laborers, farmers and other occupation which includes heavy duty workload.

Light work includes sedentary life style like office

workers and other white collar jobs.

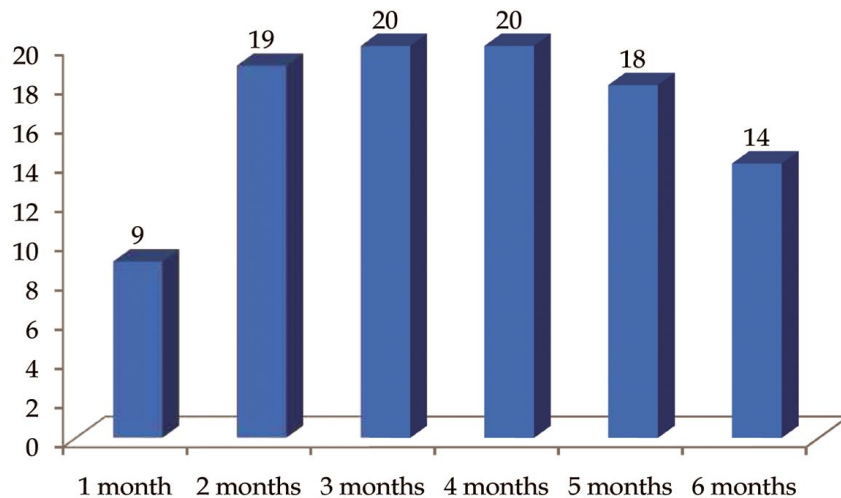
62 patients who were included in the study had strenuous works while 38 of them had relatively light work.



Graph 5: Occupation

Table 6: Duration of symptoms

Duration	Frequency	Percentage
1 month	9	9%
2 months	19	19%
3 months	20	20%
4 months	20	20%
5 months	18	18%
6 months	14	14%
Total	100	100%



Graph 6: Duration of symptoms

The mean duration of symptoms was 3.61 months, median and mode both were 4. Standard deviation found was 1.54.

Pain Intensity

Pain scaling was done using Numeric Rating Scale and Visual Analogue Scale.

Table 7: Numeric Rating Scale

	1	2	3	4	5	6	7	8	9	10
Pre op	-	-	-	-	1	5	26	35	18	15
48 hours	24	35	31	6	3	1	-	-	-	-
2 weeks	18	30	24	16	9	3	-	-	-	-
2 months	4	17	23	23	17	11	5	-	-	-
6 months	4	11	17	22	20	16	8	2	-	-

Verbal Rating Scale:

SLRT angles	Pre op	After 48 hours	After 2 weeks	After 2 months	After 6 months
30 degree	3	0	1	2	2
40 degree	12	0	4	6	9
50 degree	18	7	9	11	13
60 degree	33	19	21	24	28
70 degree	29	25	28	27	24
80 degree	4	31	22	19	16
90 degree	1	18	15	11	8

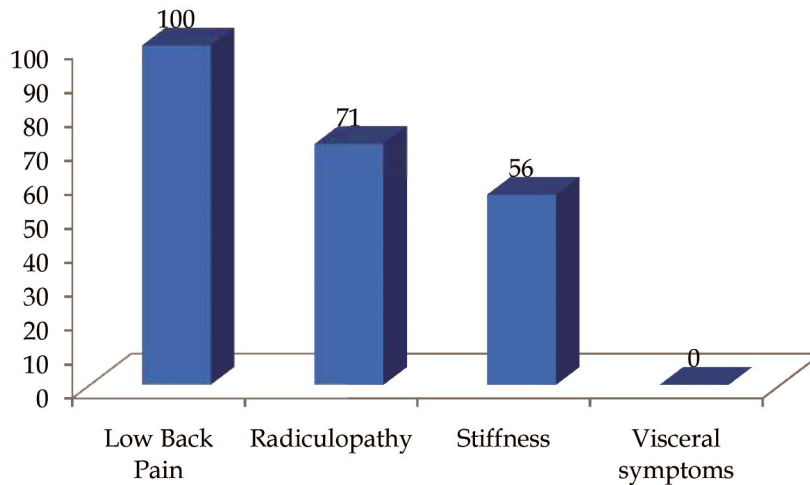
Straight Leg Raising Test

Pre operatively the mean SLRT was 58.9 degree. After 48 hours, the mean SLRT was 73.4 degree After

2 weeks, the mean SLRT was 69.9 degree After 2 months, the mean SLRT was 67.13 degree. After 6 months, the mean SLRT was 64.55 degree.

Table 10: Distribution of Symptoms

Symptoms	Frequency	Percentage
Low Back Pain	100	100%
Radiculopathy	71	71%
Stiffness	56	56%
Visceral symptoms(bowel/bladder)	0	0%
Total	100	100%



Graph 7: Distribution of Symptoms

Out of total 100 patients, 71 were associated with radiation of pain, 56 patients had accompanied

stiffness of spine but none of the patients had any visceral symptoms 93.

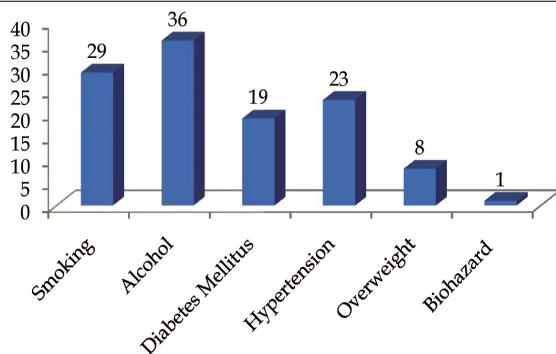
Table 11: Distribution of Signs

Signs	Frequency	Percentage
SLRT <40 degree	21	21%
Paraspinal Spasm	87	87%
Motor Deficit	22	22%
Sensory Deficit	19	19%
Total	100	100%

Out of the total 100 patients, 21 patients had SLRT <40 degree, 87 patients had paraspinal spasm, 22 patients had associated motor deficit and 19 patients had sensory deficits 94.

Table 12: Co Morbid Conditions

Conditions	Frequency	Percentage
Smoking	29	29%
Alcohol	36	36%
Diabetes Mellitus	19	19%
Hypertension	23	23%
Overweight	8	8%
Biohazard	1	1%
Total	100	100%



Graph 9: Co Morbid Conditions

Table 14: Motor, sensory deficit and lasegue's test

	Pre op	After 48 hours	After 2 weeks	After 2 months	After 6 months
Motor deficit	22	20	21	22	22
Positive Lasegue's Test	27	8	13	18	22
Sensory Deficit	19	18	18	19	19

There's no effect of epidural steroid injection on motor and sensory deficits. But epidural steroid injection is quite beneficial in reducing the stretching of nerve as depicted by Lasegues test.

Discussion

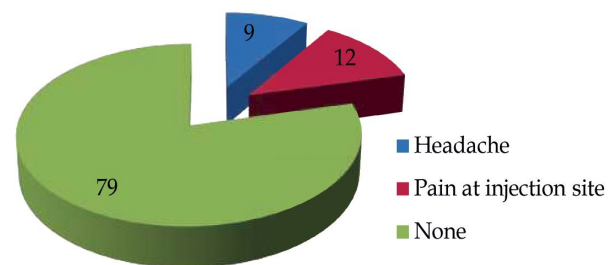
Low back pain is a very common symptom reported in all age groups. Most frequent causes in younger patients are mechanical low back pain and intervertebral disc prolapse while lumbar spinal stenosis and lumbar spondylosis prevails in the middle-aged and older patient population. Surgical intervention is not required in all patients with lumbar disc herniation or radiculopathy, multiple studies have shown that surgery may be delayed or avoided with epidural injections, admittedly at the variable rate of 41%-56% [5,6]. Epidural steroid injection is frequently used in the management of low back pain with or without radicular pain [7]. Inflammation of spinalnerve root causes radicular pain. Steroid helps

Alcohol was the commonest associated co morbidity with 36 patients being known alcoholic, followed by smoking, with 29 patients being known smoker, 23 patients had associated hypertension, 19 had diabetes, 8 patients were overweight and 1 patient was HIV positive.

Out of 100 patients, 9 patients had headache 12 patient complained of pain at injection site. Maximum patients, i.e, 79 of them didn't have any complications.

Table 13: Complications

Complications	Frequency	Percentage
Headache	9	9%
Pain at injection site	12	12%
None	79	79%
Total	100	100%



Graph 10: Complications

to control the inflammation causing nerve root irritation which play a critical role in the genesis of radicular pain [7,8,9].

Our study sample consisted of 56 males and 44 females. 62% of our patients were into a profession involving heavy physical activity and 38% were having sedentary lifestyle. It was observed that outcomes were poor in patients who had sedentary lifestyle. This probably reflects the need for a regular daily muscular stretching and strengthening exercise program for long term favourable outcome and well being.

Using numeric rating scale, Pre operative mean pain of the study group was 8.09, 48 hours after epidural steroid injection, mean pain score was 2.32, 2 weeks after the procedure, mean pain score was 2.77, 2 months after the procedure, mean pain score was 3.85, 6 months after the procedure, mean pain score was 4.35,

Thus it was seen that initially(i.e. after 48 hours of injection) there was improvement of pain, which gradually worsened on subsequent follow ups

Results of Straight leg raising test improved significantly following epidural steroid injection. Pre operatively the mean SLRT was 58.9 degree. After 48 hours, the mean SLRT was 73.4 degree, After 2 weeks, the mean SLRT was 69.9 degree, After 2 months, the mean SLRT was 67.13 degree After 6 months, the mean SLRT was 64.55 degree, Hence initially there was clinical improvement, which gradually worsened on subsequent follow ups.

Epidural steroid injection is beneficial in reducing the stretching of the nerve as seen by the results of Lasegues test. Here also the initial improvement gradually worsened on subsequent follow ups.

In this study, we found the commonest level of affected intervertebral disc prolapsed is L4L5+L5S1 (44%) followed by isolated L4L5 (31%).

From our study it was found that the effect of epidural steroid injection decreases with time. The local effect of steroids has been shown to last at least 2 to 3 months at a therapeutic level. We used the posterior interlaminar approach for epidural steroid injection, without fluoroscopic guidance. Hence, there is a possibility of the steroid not having adequately spread to the epidural compartment and inaccurate needle placement in the posterior soft tissue of the back. This could be a reason for few failures in the epidural steroid injected group of patients in our study. The strength of our study was that it was a prospective study with a reasonably good patient size making it likely that results are generalized .

The limitations in this study were:

1. The follow up was done only for six months
2. Since the patient were send back to home so we could not monitor whether the patient took any other modalities of treatment for LBP
3. Lack of control group .
4. Irrespective of whether the patients recovered or not follow-up magnetic resonance imaging (MRI) was not done in our patients 102.

Conclusion

It can be concluded that epidural steroid injection is simple, safe, minimally invasive, economical and effective mode of early pain relief of low back and radicular pain. It improves the functional status and decreases the severity of pain. It reduces the period of hospitalization, analgesic intake & facilitates early rehabilitative programs. It is associated with minimal adverse effects and complications.

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