SPINAL STENOSIS; COMPARISON OF THREE DOSES WITH SINGLE DOSE OF EPIDURAL STEROID INJECTION WITH SINGLE DOSE OF LUMBAR RADICULAR PAIN

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ABSTRACT... Introduction: Spinal stenosis causing lower back pain and radiculopathy and it is the most common cause of patient admission at Spine centre as compared to other spine pathologies. Most common complaint in the Spine outpatient department or hospital admissions Different modalities have been applied with time for its management. Among them Epidural steroid injection is also. Objectives: "To Compare three doses of epidural steroid injection with single dose of epidural steroid injection for Lumbar Radicular pain in spinal stenosis patients." Study Design: Prospective study. Setting: Ghurki Trust Teaching Hospital, Lahore, Pakistan. Period: Jan 2016 to Dec 2016. Materials and Methods: 95 patients with lumbar radicular pain due to spinal stenosis were randomly allocated into 2 groups. In Group A, 42 patients were given 120 mg of Depo-medrol (40 mg per day for 3 days) along with local anesthesia and in group B, 43 patients were given 40 mg of Depo-medrol with local anesthesia as a single dose. Both Group A and Group B were matched in terms of age and gender. On visual analogue scoring, pain was assessed after 2 weeks, 3 months and 6 months. Results: In Group A (3 doses of depomedrol) VAS improvement at 2 weeks, 3 months and 6 months were more than group B (single dose of depomedrol) which was statistically significant (p < 0.05). There were no major complications like epidural hematoma or abscess formation in both groups. The overall minor complications like flushing, transient hyperglycemia and headache due to CSF hypotension were more in Group A than Group B but statistics shows no significant difference. All the adverse events resolved within few days without any significant morbidity and subsequent hospitalizations. Conclusion: Epidural steroid injection is excellent modality in the treatment of lower back pain with radiculopathy. Moreover 3 doses have greater effect in relieving pain as compared to single dose. There is no increase risk of complications by increasing dose.

Key words: Epidural, Steroid, Radicular Pain, Depomed

INTRODUCTION

World wide, Lower back pain with radiation to one or both legs is among one of the leading causes of absenteeism from work.¹ Different surgical and non surgical modalities had been tried for its management. Among the non operative management, Epidural steroid injection are most valuable. Epidural steroid injections are advised to patients having sign and symptoms of nerve root involvement.² Operative management are advised to patients in whom conservative measurements failed to respond.³ Steroid injections can be given epidurally alone or along with local anesthetics. The efficacy of this injection increases with given with local anesthetics.⁴ The controversy exists among doses of steroid injection and still exact dose is under debate.

Riew et al in their study found that epidural injections in patients with chronic pain with radiculopathy should having local anesthetics epidural injections with or without steroid and it having effective role in relieving pain.⁵ Lutz et al tried transforaminal epidural steroid injections under image intensifier and found that it is excellent modality before going to surgical intervention in patients who having failed conservative management.⁶ There are several
complications after this epidural steroid injections like headache, increase in intensity of back pain, increase radiculopathy, facial redness, vasovagal reaction, hyperglycemia and hypertension. However, these complications are for time being and resolved. Carette S et al did a comparative study of using methylprednisolone and saline injections. He found that steroid injections are far better than saline injections but the draw back is that, it didn’t decrease the risk of surgeries. Pasqualucci A et al found that the physiotherapy should be considered along with steroid injection and local anesthesia in managing pain in patients with radiculopathy. Ohtori S et al found tried Etanercept injection as given epidurally and found that etanercept is far better than steroids for leg pain, lower back pain and numbness. Spaccarelli et al in their meta analysis found that the efficacy of these injections are good from 2 weeks to 3 months. Manchikanti L compared the efficacy of local anesthetic alone and with steroids and found that except for disc herniations, almost all patients with spinal problem got pain relieve when either local anesthesia or combination of local anesthesia and steroid given. In disc herniations local anesthesia must be given with steroid.

The main aim of this study was to compare the efficacy of single dose of depomedrol with 3 doses of depomedrol in our set up using its combination with Bupivacaine.

RESULTS

Among 95 patients, 45(47.36%) were male and 50(52.67%) were females with male to female ratio of 0.9:1 and with mean age of 45.6 ± 1.6 years. Group A include 42 patients, in which 22 were male and 20 were female while in Group B, there were 23 males and 20 females. The mean duration of radiculopathy were 6.3 ± 1.5 months. 15(15.79%) patients were below 30 years, 60(63.16%) patients were between 31- 60 years and remaining 20 (21.05%) were above 60 years.

The pre injection and post injection, visual analogue scoring are summarized in Table-I; Statistically significant difference were found in both groups at 6 months interval of follow up. There were no major complications like epidural hematoma or abscess formation in both groups. The overall minor complications like flushing, transient hyperglycemia and headache due to CSF hypotension were more in Group A than Group B but statistics shows no significant difference. All the complications resolved without any morbidity and no patient required further hospitalization.
**DISCUSSION**

Back pain especially lower side associated with radiculopathy is common in our society and the leading cause of discomfort. Different modalities had been adopted with time for its management because of the high occurrence of this condition. One of them is management with epidural steroid injections. Mostly these injections contain steroid with local anesthetics, which are thought to relieve nerve root inflammation and ischemia. These injections having far better results when given under image intensifier. Mostly two types of steroid injections are given i-e dexamethasone and triamcinolone. It has been that triamcinolone injections having longer effect as compared to dexamethasone. Transforaminal epidural corticosteroid injections are an effective treatment for acute radicular pain due to disc herniation, and frequently only require 1 or 2 injections for symptomatic relief.

In our study, we found that 3 doses of 80mg Depomedrol along with Bupivacaine is more effective in relieving pain than single dose of 80mg of Depomedrol with Bupivacaine. However, Owlia M et al compared single 40mg dose of Depomedrol with 80mg dose of Depomedrol and found statistically no significant difference between the two doses. Horlocker et al found that there is little or no risk of major complications with epidural steroid injection especially in patients using antiplatelet medications. Karaman H et al like our study found that there is no major complications with these epidural injections. Minor complications occurred but these resolved without any serious event.

Kang S-S et al in their study found that a minimal effective dose of corticosteroid (triamcinolone 10 mg) for immediate pain relief in TFESI for patients with lumbosacral radicular pain due to a herniated disc. McGrath JM et al in their study regarding the complications after epidural injections found that there are no major complications with it. However there were 103 minor complications. The most common complications were increased pain, pain at injection site, persistent numbness, and few other. Complications were less common in transforaminal injections, than in interlaminar injections.

Lee S-H et al in their meta analysis found that the epidural steroids with sodium chloride solution or bupivacaine may not be effective, whereas, either lidocaine alone or lidocaine with steroid have shown significant evidence of efficacy both in radiculopathy and spinal stenosis. Davis N et al all found that after 2 years of follow up, almost half of the patients were satisfied with transforaminal injection and didn’t require further treatment, one fourth of the patients need further injection and others required surgery. Similarly Natarajan S et al study showed that significant improvement in the VAS score during their regular follow up when compared to their pre injection levels. Patient satisfaction was the high at 2 weeks post operatively slightly declining over time.

Friedly JL et al found that the epidural injections of corticosteroid plus lidocaine haven’t any significant role after 6 weeks. The injection type have no role in relieving pain earlier or late. Moreover, in patients in whom first injection didn’t relieve pain within 6 weeks have no role in relieving pain with subsequent injections. Vorobeychik Y et al all found that the efficacy of epidural injections without using image intensifier lies for just 6 weeks which is much lower than our study. Kamble PC did a study on Outcome of single level disc prolapse treated with transforaminal steroid versus epidural steroid versus caudal steroids and found that the pain was significantly low at 6 months interval in transforaminal steroid group as compared to others two.

There are few limitations in our study. The sample size was low and the patients were not followed for more than 6 months. In our study the comparison was done between only one and three doses of steroids using them as epidural while the comparison was not done with other modalities.
of injecting steroids. Moreover the patients need to be admitted for dosage and to see any complications which increases the burden on the patient. So, further studies should be carried out for better results.

CONCLUSION
Lower back pain with radiculopathy always affect the social life. Depomedrol injection should always be considered as option for it beside, other modalities of treatment. Moreover 3 doses are more effective as compared to single dose without any adverse effects.

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REFERENCES


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