Section: Anesthesia

Research

COMPARISON OF TRANSFORAMINAL EPIDURAL INJECTION WITH TRIGGER POINT INJECTION FOR LOW BACK PAIN

Mohit Mahajan[1], Sunny Bhasin[2], Sumit Kumar Khatri[3], Preet Kanwal Narula[4]

[1]Head and Senior Consultant, Department of Anesthesia, Pain Medicine and Critical care Director, Mahajan Medicity Pvt Ltd, Pathankot, Punjab, India
[2]Senior Consultant and Anaesthesiologist Director Aastha Pain Clinic Jabalpur, Chief Intensivist National Hospital, Jabalpur MO NSCB Medical College, Jabalpur, Madhya Pradesh, India
[3]Consultant, Department of Pain medicine and Anaesthesia, Arihant Hospital & Research Center, Indore, Madhya Pradesh, India
[4]Principal Consultant & Head, Department of Anaesthesia, Pain Medicine & Critical Care, Max Super Speciality Hospital, Bathinda, Punjab, India

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Corresponding Author:
Dr. Mohit Mahajan,
Email:mohitmahajan006@gmail.com
ORCID: 0000-0001-8935-3707

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Abstract

Background: To compare transforaminal epidural injection with trigger point injection for low back pain. **Materials and Methods:** Eighty- six patients of chronic back pain of either gender was divided into 2 groups of 43 each. Group A patients were given transforaminal epidural corticosteroid injections (TFESI) and group B were given trigger point injection (TPI). Visual analogue scale (VAS) score was evaluated before procedure and at 1 month, 3 months and 6 months. **Result:** Group A comprised of 23 males and 20 females and group B had 19 males and 24 females. The mean age in group A patients was 35.2 years and in group B was 36.1 years. Duration of pain symptoms was 6.8 months in group A and 7 months in group B. Affected root stump was L5 seen in 10 in group A and 8 in group B, S1 20 in group A and 19 in group and both L5 and S1 13 in group A and 16 in group B. The difference was significant (P< 0.05). The mean VAS core at 1 month in group A was 34.7 and in group B was 41.2, at 3 months was 26.3 in group A and 32.5 in group B and at 6 months was 12.5 in group A and 25 in group B. A significant difference was observed (P< 0.05).**Conclusion:** Lumbar transforaminal epidural steroid injection found to be effective and efficient in managing lower back pain as compared to trigger point injection.

INTRODUCTION

Lumbar radicular pain caused by a herniated lumbar disc is a common cause of incapacitating chronic low back pain. The pain is caused by compression of the nerve by disc contents that cause the inflammation of the nerve roots. Changes in sensory neuron ion channel function may occur in addition to the inflammation of the nerve roots.[1]

Low back pain (LBP) is a common and expensive medical condition. LBP rarely refers to a serious disorder. The annual prevalence of low back pain in the US is estimated between 15% and 20% and its lifetime prevalence is over 60%.[2] Patients with chronic low backache are being managed with nonsteroidal anti-inflammatory drugs (NSAIDs), low-potency opioids, bed rest, and physiotherapy but without achieving significant pain relief. Surgery is eventually required in 14% of patients with significant pain, especially if associated with neurological impairment.[3]

Lumbosacral epidural corticosteroid injections are used with increasing frequency in the treatment of patients with lumbosacral radicular pain. Epidural injections when performed through translaminar or caudal approaches without fluoroscopy and contrast are likely to miss the perceived target area in 30-40% instances.[4] The rationale for using epidural steroids originates from the studies showing abnormal concentrations of nociceptive and inflammatory mediators, around lumbosacral disc herniations causing a chemical neuroradiculitis. Corticosteroids, by inhibiting prostaglandin synthesis, limit both cell-mediated and humoral immune responses.[5] These drugs also stabilize cellular membranes and blocks nociceptive C-fiber conduction.[6] A trigger point (TrP) is localized only in the muscles and myofascial trigger points (MTrPs) are a common source of (regional) pain in patients presenting with musculoskeletal pain.[7] Considering this, we performed present study to

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compare transforaminal epidural injection with trigger point injection for low back pain.

MATERIALS AND METHODS

After considering the utility of the study and obtaining approval from ethical review committee of the institute, we selected eighty- six patients of chronic back pain of either gender. All gave their written consent for active participation in the study.
Demographic profile of each patient was recorded. Patients were divided into 2 groups of 43 each. Group A patients were given transforaminal epidural corticosteroid injections (TFESI) and group B were given trigger point injection (TPI). Visual analogue scale (VAS) score was evaluated before procedure and at 1 month, 3 months and 6 months. The results were compiled and subjected for statistical analysis using Mann Whitney U test. P value less than 0.05 were set significant.

RESULTS

Group A comprised of 23 males and 20 females and group B had 19 males and 24 females [Table 1].
The mean age in group A patients was 35.2 years and in group B was 36.1 years. Duration of pain symptoms was 6.8 months in group A and 7 months in group B. Affected root stump was L5 seen in 10 in group A and 8 in group B, S1 20 in group A and 19 in group and both L5 and S1 13 in group A and 16 in group B. The difference was significant (P< 0.05) [Table 2].

Table 1: Patients distribution

Groups	Group A	Group B
Method	TFESI	TPI
M:F	23:20	19:24

Table 2: Demographic data.

Parameters	Group A	Group B	P value
Mean age (years)	35.2	36.1	0.94
Duration of pain symptoms (months)	6.8	7.0	0.86
Affected nerve root			
L5	10	8	0.31
S1	20	19	
L5 and S1	13	16	

Table 3: Comparison of pain

Period	Group A	Group B	P value
1 month	34.7	41.2	0.02
3 months	26.3	32.5	0.05
6 months	12.5	25.0	0.04

The mean VAS core at 1 month in group A was 34.7 and in group B was 41.2, at 3 months was 26.3 in group A and 32.5 in group B and at 6 months was 12.5 in group A and 25 in group B. A significant difference was observed (P< 0.05).

DISCUSSION

We performed present study to compare transforaminal epidural injection with trigger point injection for low back pain. In this study we enrolled eighty- six patients of low back pain. Patients were divided into 2 groups of 43 each. Group a patients were given transforaminal epidural corticosteroid injections (TFESI) and group B were given trigger point injection (TPI). Studies suggest inflammation of the affected nerve roots in the mechanism of pain.[8] The inflammatory component has attracted the use of corticosteroids to decrease inflammation and thus reduction in pain.[9] Steroid injections have been used through different routes as an alternative to surgery or adjunct to conservative therapy. Epidural steroid injection has been used for treatment of lumbosacral radiculopathy with varying success rates, 20- 80%.[10]

Our results showed that group A comprised of 23 males and 20 females and group B had 19 males and 24 females. Bathia et al,[11] in their study compared 90 patients who were given TFESI [group E] and 90 patients who were given TPI [group T]. The VAS score in group E at one month (33±13.16), three months (25±16) and six months (16.14±16) was less than that the scores in group T at one month (40.6±14.16), three months (33±18) and six months (26±22). The difference of VAS and ODI between group E and T was statistically significant. The mean age in group a patients was 35.2 years and in group B was 36.1 years. Duration of pain symptoms was 6.8 months in group A and 7 months in group B. Affected root stump was L5 seen in 10 in group A and 8 in group B, S1 20 in group A and 19 in group and both L5 and S1 13 in group A and 16 in group B. Roy et al,[12] included 30 patients having lumbosacral radiculopathy secondary to prolapsed disc. As per NRS, almost all patients had complete pain relief (mean 98%) immediate post procedure. At 24hrs, the score was 79%, at 1 month 60%, at 6 months 58.5% and at 1 year 59%. Pre procedure VAS was 9.2 and thereafter 0.6, 1.8, 3.9, 3.8 and 4.2 at similar time points. Roland-Morris score was

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18/24, 10/24, 9/24, at pre-procedure, at 6 months and at 1 year, respectively. No complication was noted in any patient except post procedural local pain. The mean VAS core at 1 month in group A was 34.7 and in group B was 41.2, at 3 months was 26.3 in group A and 32.5 in group B and at 6 months was 12.5 in group A and 25 in group B. Abdullah et al,[13] in their study found that the mean VAS mean scores of the groups at admission were 7.22 and 7.55, respectively; and there was not a significant association between the groups ($p > 0.05$). A significant difference between the study groups occurred after procedure starting from minute 5 ($p<0.05$). The pain scores decreased significantly in the TPI group. The patients in the NSAI group also benefited from the treatment, but the trigger point injection group benefited more as observed in all time points of VAS scoring. During the 60 minutes' follow-up period, the mean VAS pain score decreased by 0.41 ± 1.30 in the TPI group and by 2.59 ± 2.37 in the NSAI group ($p<0.001$). Respond the treatment was significantly higher group TPI than group NSAID (21/22 vs 20/32 respectively, p=0.008).

Bhatti et al,[14] evaluated the effectiveness of transforaminal epidural steroid injection (TFESI) for treating lumbar radiculopathy caused by nerve root compression, A total of 50 patients were followed up for 6 months post-injection. Pain intensity and functional impairment were assessed with the Numeric Pain Rating Scale (NPRS) and the Oswestry Disability Index (ODI) scores, respectively, at the first visit, 3 months, and 6 months. There was a mean reduction of 4.7 points in NPRS from a mean of 8.2 pre-injection to 3.5 at 6 months follow-up ($P = 0.001$). Likewise, a mean ODI score of 29 was recorded at 6 months follow-up (mean reduction of 13.7 points in ODI score) as compared to 42.7 at baseline ($P = 0.001$).

CONCLUSION

Lumbar transforaminal epidural steroid injection found to be effective and efficient in managing lower back pain as compared to trigger point injection.

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