

## **Rusults of epidural steroids injection in patients with lumbosciatic pain.**

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### **ผลของการรักษาผู้ป่วยปวดหลังส่วนเอวด้วยวิธี epidural steroid injection.**

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ภาควิชาออร์โทปิดิกส์และเวชศาสตร์ฟื้นฟู คณะแพทยศาสตร์ มหาวิทยาลัยขอนแก่น

ศึกษาผู้ป่วยปวดหลังส่วนเอวซึ่งหากที่ได้รับการรักษาด้วยวิธี epidural steroid injection ที่โรงพยาบาลศรีนครินทร์และโรงพยาบาลเอกชน จังหวัดขอนแก่น ตั้งแต่ ปี 2531 ถึง 2533 จำนวน 40 ราย เพื่อดูผลของการรักษาด้วยวิธีดังกล่าว อายุเฉลี่ยของผู้ป่วยทั้งหมดคือ 57.2 ปี (24 - 62 ปี) ผู้ป่วยทั้งหมดได้รับการรักษาด้วยการฉีดยา methylprednisolone (depo-medrol 40 มก./มล.) จำนวน 2 มล. ร่วมกับ lidocaine 1% จำนวน 3 มล. ทุกสัปดาห์ จำนวน 3 ครั้ง ผู้ป่วยทั้งหมดถูกแบ่งเป็น 2 กลุ่ม กลุ่มแรกมีอาการปวดหลังน้อยกว่า 3 เดือน กลุ่มสองมากกว่า 3 เดือน มีผู้ป่วยที่รักษาในกลุ่มแรก 11 ราย และกลุ่มที่สอง 29 ราย ผลการรักษาในสัปดาห์แรกหลังการฉีดยาครบ 3 ครั้ง พบว่าได้ผลดีทั้งสองกลุ่ม (81.81%, 72.42%) ที่สัปดาห์ที่สามหลังฉีดยาครบ พบผลการรักษาดีในกลุ่มแรก 63.63% และกลุ่มที่สอง 58.62% ที่สัปดาห์ที่ 6 และที่ 3 เดือน ผลการรักษาดีในกลุ่มแรกและกลุ่มสอง <36.36% ในการศึกษาสรุปผลว่าการรักษาด้วยวิธี epidural steroid injection ได้ผลดีในช่วงแรกของการรักษา (<6 สัปดาห์)

**Abstract:**

Fourty patients with recalcitrant lumbosciatic pain were treated by epidural steroid injection at Srinagarind hospital, and a private hospital between January 1988 to April 1990, to study the efficacy of epidural steroid injection. the average age was 52.2 years (24-62 years). All patients were injected with 2 cc. of methylprednisolone (depo-medrol 40 mg/cc.) plus 3 cc. of 1% lidocaine at weekly interval for 3 weeks. The patients were divided into 2 groups; group I includes those patients who had lumbosciatic pain less than 3 months, group II more than 3 months. In this study there were 11 patients in group I and 29 in group II. The results at one week after completion of the injections were good in both groups (81.81%, 72.42%), at 3 weeks (after completion of the injection) were quite good 63.63% in group I and 58.62% in group II and at 6 weeks after completion of the injection the result were good <36.36%. In this study, it appears that the lumbosciatic pain may receive temporary relief with steroid injection especially in short term (<6 weeks) but no value in long term treatment.

Lumbosciatic pain from either spinal stenosis or a herniated lumbar disc can be partially or totally disabling. Traditional treatment ranges from conservative therapy to surgery. Most of the patients dislike surgical therapy because of anesthetic and surgical risks. However if the patients failed to respond to conservative therapy, they had to undergo surgical method. Epidural steroid injections is a form of intermediate treatment between these two modalities. This method of treatment has been studied by many physicians. In 1957 Cappio<sup>1</sup> reported good results in 67% of cases. Goebert<sup>2</sup> et al. established the safety of this technique with good results in 72% of patients treated in 1961. Winnie<sup>3</sup> et al. in 1972 confirmed that the pharmacologic effect of the injected steroids was responsible for pain relief and improved work status in 80% of patients after six months of follow up study. Yates<sup>4</sup> in 1972

demonstrated in a double blind prospective study that injection of local anesthetics and steroids was more effective than saline or local anesthetics injected alone. However Cruckler<sup>5</sup> in 1985 reported a prospective, randomized double blind study evaluating 73 patients with radicular pain and concluded that epidural steroid injections were of unproven value and should be regarded as such. Nevertheless Rosen<sup>6</sup> in 1987 reported a short term good results in 60% of 40 patients studied.

From several studies<sup>1-6</sup>, the results of treating patients with epidural steroid injections were varied, but most of the studies showed favorable results. If this method gives good results in treating patients with lumbosciatic pain, it should be a method of choice for patient who failed to respond to conservative treatment and still would like to avoid surgery.

The aims of this study are to examine the efficacy of epidural steroid injections in alleviating lumbosciatic pain and to determine whether its use appears to have any long term clinical effect.

**Materials and Methods**

Between January 1988, and April 1990, 42 patients were treated at Srinagarind hospital and another private hospital in KHONKAEN with epidural steroid injections for lumbosciatic pain who failed to respond to conservative treatment (of more than 6 weeks duration)

All patients had undergone a radiological studies to exclude malignancy or infection of the lumbosacral spine. All epidural steroid injections were administered to the patients by the same physician, who use the loss of resistance method to locate the epidural space and careful aseptic techniques. Each patient was given 2 ml of methylprednisolone (40 mg/ml) plus 3 ml of 1% lidocaine, at weekly interval for 3 weeks. The follow up of the study was performed at 1 week, 3 weeks, 6 weeks, 3 months and 6 months after completion of injections. Each patient was interviewed and asked to rate lumbosciatic pain on a scale of zero to

ten<sup>6</sup>, with zero denoting no pain and ten denoting no change in preinjection pain. The patients were questioned about any additional treatment or medications they needed, and about their satisfaction with the injection as a form of treatment.

## Results

All of 42 patients completed the study except two. Thus the remaining were 40 patients 23 cases were men and 17 cases were women. The average patient age was 52.2 years (range, 24-62 years). The patients were divided into two main groups based on duration of lumbosacral pain. Group I consisted of patients whose pain was subacute, less than three months' duration. Group II was composed of patients whose pain was chronic, more than three months' duration.

The reason for such grouping is to conform to the etiologic cause of the pain, which also conform to the duration of symptoms. There were 11 cases in group I and 29 cases in group II in this category.

Results of treatment were classified into four categories (based on Berman<sup>7</sup>)

Excellent : complete relief of pain, no work restrictions, and no need for additional treatment, pain scale 0-1

Good : nearly complete relief of pain and minimal work restrictions, pain scale 2-4

Fair : pain at moderately reduced intensity with moderate work restrictions, pain scale 5-7

Poor : pain was not relieved, was unable to work and required further hospitalization or surgery, pain scale 8-10

Results of treatment after completion of injections were as in the table I

Table I Results of treatment using epidural steroid injections, at different follow up periods.

	1 week		3 week		6 week		3 month	
	group I	group II	group I	group II	group I	group II	group I	group II
Excellent	4(36.36%)	8(27.59%)	2(18.18%)	5(17.24%)	1(9.09%)	4(13.79%)	1(9.09%)	1(3.45)
Good	5(45.45%)	13(44.83%)	5(45.45%)	12(41.38%)	3(27.27%)	10(34.48%)	2(18.18%)	7(24.14%)
Fair	1(9.09%)	5(17.24%)	2(18.18%)	7(24.14%)	5(45.45%)	9(31.03%)	5(45.45%)	12(41.38%)
Poor	1(9.09%)	3(10.34%)	2(18.18%)	5(17.24%)	2(18.18%)	6(20.69%)	3(27.27%)	9(31.03%)
Total	11	29	11	29	11	29	11	29

Note : group I : Symptomatic for less than 3 months  
group II : Symptomatic for more than 3 months

The results of treatment after completion of injections at the first week in group I and group II, there were favorable results (excellent,

good) in 81.81% & 72.42% ; at third weeks, there were favorable results in 63.63% & 58.62%; at sixth weeks, there were favorable

results in 36.36% & 48.27% ; and at 3 months there were favorable results only in 27.27%, and 27.59%.

At 6 months after completion of injection there were 21 patients loss of follow up examination, so we had to send questionnaires to ask about any further treatment that they had received and about their satisfaction with the injection as a form of treatment. We recieved 33 answers with 14 cases (42.42%) satisfied with this form of treatment and 19 cases (57.58%) unsatisfied.

Complications were found in 3 cases but all were transient adverse effect. Thus complications occurred in 7.5% of patients, there was a case of transient hypotension (90/60 mm Hg), 1 case of difficulty voiding, and 1 case of headache. There were no deaths or systemic side effects from the steroids. All complication recovered within a few days.

## Discussion

In this study, we did not use double-blind prospective method because we have to explain the method of treatment to the patients and the patients have to cooperate in this treatment, and there was a former study of double-blind prospective study that injection of steroid was more effective than saline or local anesthetics injected alone<sup>4</sup>. Thus we studied the efficacy of epidural steroid injections in patients that failed to respond to conservative therapy.

The mechanism of action of epidural steroids has been debated. Kelman<sup>8</sup> (1944) believed that the local anesthetics helped by breaking the pain spasm cycle. It was also thought that, because of volume effects, the injection may have broken down peridural adhesions and thereby relieved nerve impin-

gement. Winnie<sup>3</sup> (1972) demonstrated that the pharmacologic effect of the steroid, rather than a volume effect, is responsible for pain relief. This supports the belief that inflammation plays a significant role in lumbosciatic pain and provides a rationale for dividing patients into groups of those with subacute and chronic pain.

Results at follow up period showed the favorable results in the first few weeks and unfavorable results after sixth weeks. On following the patients up to 6 months there were 21 cases (52.5%) drop out . This result yielded a positive clinical response in short term period or temporary relief of pain and no value in long term therapy.

In evaluating the satisfaction of the method of treatment. After 6 months follow up, there were 19 unsatisfied cases (57.58%). This means that in long term treatment, it yielded unsatisfactory results.

Epidural steroid injection has a minimum of morbidity. Most complications are quickly and easily controlled. so we agree with Goebert<sup>2</sup> that this method is safe and can be used as a method of treatment in lumbosciatic pain. However epidural steroid injections yielded a temporary relief of symptoms. The efficacy of this treatment remains unproven and is of questionable clinical value. Their use in the short term relief of symptoms may be reliable but no value in long term treatment.

## Conclusion

A study of the results of treatment on patients with lumbosciatic pain who failed to respond to conservative treatment was carried out using epidural steroid injection. Forty patients completed the study.

The results were good in first few weeks after completion of the injections, then after

sixth weeks the results were poor. In evaluating the satisfaction of the method of treatment at 6 months, 19 cases (57.58%) were unsatisfied. In this study, we concluded that the efficacy of epidural steroid injections in lumbosciatic pain remains unproven. It can be used for short term relief, but no value in long term treatment.

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