

Role of Epidural Steroid in Treatment of Chronic Low Backache.

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Abstract: Epidural steroid Therapy is one of the useful conservative modalities in the treatment of low backache with or without radicular pain. Epidural Injection of a mixture of (2ml) of Methylprednisolone, 10ml of NS & 5ml of xylocaine (2%) Injected through lumbosacral route in 300 patients suffering from low backache produced 84% excellent to good results; 12% fair results & 4% showed poor results, when evaluated after 3 months of injection. Patients suffering from PIVD had good response to this treatment. Very few complications were encountered and these were easily managed without any long term sequelae. This method was found to be effective and safe.

INTRODUCTION

Non-specific chronic low backache not responding to usual conservative management rest in hard bed and analgesics is a common problem encountered in orthopedic practice. Inflammation and oedema of nerve roots due to 'H' substance released locally by injured tissue is a major factor in the pathogenesis of low backache. Corticosteroids are known to inhibit peripheral response of tissue to 'H' substance. Epidural steroid injection is a popular mode of treatment in case of chronic low backache.

MATERIAL & METHODS

In this study, 300 cases of chronic low backache with or without radicular pain coming to orthopaedic outdoor deptt. of Rajindra Hospital Patiala were taken. These patients were initially treated with rest, analgesics, pelvic traction for two weeks & those patients who did not respond to conservative management were taken for epidural steroid injection. In the meantime all the patients were thoroughly investigated to find out the cause of low backache. After thorough investigations patients were divided based on underlying cause for backache as shown in table no. 1.

Table 1: Profile of Patients with low Backache

Diagnosis	No. of patients	With neurological symptoms	Without neurological symptoms
Prolapsed intervertebral disc	240	180	60
Spondylolisthesis	24	12	12
Osteoarthritis Spine	36	00	36

The injections were given in the operation theatre under strict aseptic conditions. After all the necessary preliminary investigation, in the operation theatre with intravenous line insitu, patients were put in lateral position. A local anesthetic wheal was raised through which 18 G Tuohy's needle was introduced into the epidural space. The epidural space was confirmed with the help of loss of resistance technique and in the epidural space injection of methylprednisolone 2ml 980mg, xylocaine 2% (5ml) and normal saline 10ml was injected.

All the patients were reviewed after 15 days for one month and then monthly for three months to assess relief of pain (graded according to criteria laid down by White et al.), any complications, improvement in SLRT (Straight leg raising test), and residual neurological deficit. Quality of pain relief was graded as: *Excellent* 100% relief; *Good* 50% relief; *Fair* 25% relief; *Poor* 10% relief

RESULTS

It was observed that mean age of patients under study was 41.54

years and there were 136 males and 174 females. The underlying cause for low backache was PIVD in 240 patients, spondylolisthesis in 24 patients and osteoarthritis spine in 36 patients, 180 patients with PIVD and 12 patients with spondylolisthesis were having neurological symptoms. In our study conducted on 300 patients, 252 (84%) patients were having excellent to good results, 36 (12%) cases show fair results and 12 (4%) cases show poor results as shown in table no. 2.

Table 2: Response Rate with Epidural steroids

Grade	No. of patients	% age
Excellent	84	28
Good	168	56
Fair	36	12
Poor	12	4
Total	300	100

Out of 240 cases of PIVD 210 cases had excellent to good results, 18 had fair results and 12 had poor results. Out of 24 cases of SDL 12 had excellent to good results and 12 had fair results. Out of 36 cases of OA 30 had excellent to good results and 6 had fair results as shown in table no. 3.

Table 3: Disease wise Response to Epidural steroids

Diagnosis	Excellent	Good	Fair	Poor
PIVD (240)	72 (30%)	138 (7.5%)	18(7.5%)	12(5%)
SDL (24)	6 (25%)	6(25%)	12(50%)	-
OA (36)	6 (16.66%)	24 (66.6%)	6(16.67%)	-

Few transient complications were encountered, 6 patients developed vomiting, 6 had hypotension and 12 had motor blockage but all these were transient and no serious complication developed.

DISCUSSION

Epidural steroid injection for treatment of low backache with or without radicular pain is a useful therapeutic measure. It is safe and complications free with full-scale sterile measures. George Heyes Moore³ in his study of 120 patients treated by epidural steroid injection had 62% success. Cuckler et al in double blind study involving 73 patients treated with epidural steroid injection had 61% success.

Singh et al found success rate to be 77% in cases with acute, chronic and recurrent low backache, treated with epidural steroid injection. Watts et al in a study involving 907 patients with sciatica and low backache found pain relief from 75-95% after epidural steroid injection compared to placebo.

Gnezdilov et al in series of 26 patients with discal herniation at various

stages of radicular pain syndrome found efficacy of epidural steroid injection ranges between 57.3-100%.

In our study 252(84%) cases showed excellent to good results 36(12%) fair and 12 (4%) poor results. The mechanism of action of epidural injection has been debated. Kelman⁴ believed that the local anaesthetic helps by breaking pain spasm cycle. Large amount of fluid injected helps mechanically in breaking the adhesions there by relieving nerve impingement and pain relief. This study confirms the value of epidural steroid injection with normal saline and xylocaine in treatment of chronic low backache with or without radiculopathy. At least some of failures were due to potentially reversible inflammatory changes in nerve roots being allowed to progress to a stage where they are beyond the help of corticosteroid injection. The results of this study are encouraging and it can be concluded that both mechanical effect of fluid injected and pharmacological effect of steroids play a role in relieving low backache. This is an intermediate form of treatment which is effective, safe, economical and must be tried in all cases of chronic low backache.

RECOMMENDED READINGS

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LITERATURE REVIEW

Post-Prandial Hypertriglyceridemia in Patients with Type 2 Diabetes Mellitus with and without Macrovascular Disease.

V Kumar, SV Madhu, G Singh, JK Gambhir; JAPI; October 2010;Vol.: 58; 603-605.

Objectives: To study the postprandial hypertriglyceridemia in patients with type 2 diabetes mellitus with and without macrovascular disease. **Methods:** Postprandial lipids were studied in 13 type 2 diabetic subjects with macrovascular disease (group I), 13 diabetic subjects without macrovascular disease (group II) and 13 age, sex and BMI matched healthy controls (group III) after an oral fat challenge which consisted of meal providing 729 kcal/m² body surface area with 65.2 g fat. **Results:** All the three groups were age, sex and BMI matched. Average duration of diabetes was not significantly different between both the diabetic groups. Waist-hip ratio (WHR) was significantly more in group I and II as compared to group III. Also group I displayed significantly higher WHR than group II. Fasting total cholesterol and LDL levels were significantly higher in group I compared to group III. Fasting HDL was significantly lower in both group I and II vs group III. Fasting TG was not significant between any of the three study groups. Significant postprandial hypertriglyceridemia was observed in group I and group II compared to group III. When area under curves (iAUC) for different lipid parameters were adjusted for their respective fasting values, it was observed that only iAUC TG and iAUC VLDL remained significantly higher in group I and group II as compared to group III. Postprandial triglyceride levels at 6 and 8 hours in group I were significantly higher as compared to group III. Postprandial HDL-C levels at 6 and 8 hours were significantly lower group I and II as compared to group III. Postprandial triglyceride parameters showed significant correlation with fasting triglyceride in group I and II and no significant correlation was found with any of the anthropometric, glycemic and insulin resistance measures. **Conclusion:** This study finds significant postprandial hypertriglyceridemia and significant delay in postprandial triglyceride clearance following a standardized fat meal challenge in patients with type 2 diabetes mellitus, particularly those with macrovascular disease. Persistent postprandial hypertriglyceridemia may result in a pro-atherogenic environment leading to atherosclerosis and macrovascular disease in type 2 diabetes subjects.

Estimated glomerular filtration rate and albuminuria are independent predictors of cardiovascular events and death in type 2 diabetes mellitus: the Fenofibrate Intervention and Event Lowering in Diabetes (FIELD) study.

Drury PL, Ting R, Zannino D, et al; *Diabetologia.* 2011 Jan;54(1):32-43. Epub 2010 Jul 30.

We investigated effects of renal function and albuminuria on cardiovascular outcomes in 9,795 low-risk patients with diabetes in the Fenofibrate Intervention and Event Lowering in Diabetes (FIELD) study. Baseline and year 2 renal status were examined in relation to clinical and biochemical characteristics. Outcomes included total cardiovascular disease (CVD), cardiac and non-cardiac death over 5 years. Lower estimated GFR (eGFR) vs eGFR $e^{-0.90} \text{ ml min}^{-1} 1.73 \text{ m}^2$ was a risk factor for total CVD events: (HR [95% CI] 1.14 [1.01-1.29] for eGFR 60-89 $\text{ ml min}^{-1} 1.73 \text{ m}^2$; 1.59 [1.28-1.98] for eGFR 30-59 $\text{ ml min}^{-1} 1.73 \text{ m}^2$; $p < 0.001$; adjusted for other characteristics). Albuminuria increased CVD risk, with microalbuminuria and macroalbuminuria increasing total CVD (HR 1.25 [1.01-1.54] and 1.19 [0.76-1.85], respectively; $p = 0.001$ for trend) when eGFR $e^{-0.90} \text{ ml min}^{-1} 1.73 \text{ m}^2$. CVD risk was further modified by renal status changes over the first 2 years. In multivariable analysis, 77% of the effect of eGFR and 81% of the effect of albumin:creatinine ratio were accounted for by other variables, principally low HDL-cholesterol and elevated blood pressure. Reduced eGFR and albuminuria are independent risk factors for cardiovascular events and mortality rates in a low-risk population of mainly European ancestry. While their independent contributions to CVD risk appear small when other risk factors are considered, they remain excellent surrogate markers in clinical practice because they capture risk related to a number of other characteristics. Therefore, both should be considered when assessing prognosis and treatment strategies in patients with diabetes, and both should be included in risk models.