

Patient-Reported Outcome of Transforaminal Steroid Injection for Lumbar Radiculopathy at the National Orthopaedic Hospital Dala Kano Nigeria

Kawu Ahidjo Abdulkadiri^{1*}, Abubakar Kabir¹, Nurudeen Aminu Muhammad¹, Sani Abdullahi Tsoho¹, Mamman Muhammad Lawal¹, Chiroma Muhammad Musa¹, Misbahu Haruna Ahmad², Ahmed Bola Abdulkadir³, Ramat Ali Mohammad⁴, Tijjani Garba Magashi¹, Ibrahim Sulyman⁵

¹Department of Orthopaedics, National Orthopaedic Hospital, Dala, Kano Nigeria

²Faculty of Clinical Sciences, Bayero University Kano, Nigeria

³Department of Surgery, University of Ilorin Teaching Hospital, Ilorin Kwara State Nigeria

⁴Department of Surgery, National Orthopaedic Hospital, Azare-Hawul Borno State Nigeria

⁵Department of Surgery, Maitama District Hospital, Abuja

DOI: <https://doi.org/10.36347/sjams.2026.v14i10.004>

| Received: 02.08.2026 | Accepted: 06.10.2026 | Published: 09.10.2026

*Corresponding author: Kawu Ahidjo Abdulkadiri

Department of Orthopaedics, National Orthopaedic Hospital, Dala, Kano Nigeria

Abstract

Original Research Article

Background: Lumbar radiculopathy is a common cause of disability. Transforaminal epidural steroid injection [TFESI] is a minimally invasive treatment option for patients who fail conservative management. Data on patient-reported outcomes and predictors of response from Nigerian centres are limited. This study evaluated the outcomes of TFESI for lumbar radiculopathy at a Nigerian tertiary centre. **Methods:** A retrospective cohort study of 358 patients who underwent TFESI for lumbar radiculopathy at the National Orthopaedic Hospital Dala, Kano, from January 2019 to June 2025 was conducted. Outcomes were assessed at 3, 6, and 12 months using the Visual Analogue Scale [VAS] for leg pain and the Oswestry Disability Index [ODI]. Outcomes were classified as good [$\geq 50\%$ reduction in VAS and ≥ 15 -point reduction in ODI] or poor. Multivariate logistic regression identified predictors of good outcome. **Results:** At 3 months, 305 patients [85.2%] were available for follow-up; 34 were lost. At 6 months, 286 patients [79.9%] were available; an additional 19 were lost. At 12 months, 305 patients [85.2%] were available; a total of 53 [14.8%] were lost by 12 months. Good outcome was achieved in 68.9% at 3 months, 62.6% at 6 months, and 54.7% at 12 months. Mean VAS decreased from 7.4 ± 1.5 to 3.2 ± 1.8 at 3 months [$p < 0.001$] and 3.8 ± 2.0 at 12 months [$p < 0.001$]. Mean ODI decreased from 56.8 ± 14.2 to 28.4 ± 15.6 at 3 months [$p < 0.001$] and 32.6 ± 16.4 at 12 months [$p < 0.001$]. Independent predictors of good outcome included: symptom duration < 6 months [adjusted OR 3.2, 95% CI: 1.5–6.8], radicular pain without motor deficit [OR 2.8, 95% CI: 1.3–6.1], single-level injection [OR 2.4, 95% CI: 1.1–5.2], and no previous injection [OR 2.1, 95% CI: 1.0–4.6]. **Conclusions:** TFESI provides significant short-term relief for lumbar radiculopathy, with diminishing benefit over 12 months. Shorter symptom duration, radicular pain without motor deficit, single-level injection, and no previous injection predict good outcome.

Keywords: Transforaminal steroid injection; lumbar radiculopathy; patient-reported outcomes; predictors; Nigeria.

Copyright © 2026 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

INTRODUCTION

Lumbar radiculopathy is a common and disabling condition caused by compression or irritation of the lumbar nerve roots, most frequently due to disc herniation or spinal stenosis [1,2]. It is characterised by radiating leg pain, often accompanied by sensory disturbances, motor weakness, and reflex changes in the affected dermatomal and myotomal distribution [3,4]. In Nigeria, lumbar radiculopathy is a frequent cause of disability, with significant impact on productivity and quality of life [5,6].

Conservative management, including physiotherapy, analgesics, and activity modification, is the first-line treatment for most patients [7,8]. However, a significant proportion of patients fail to achieve adequate relief with conservative measures and may require more invasive interventions [9,10]. Transforaminal epidural steroid injection [TFESI] is a minimally invasive procedure that delivers corticosteroids directly to the affected nerve root, providing targeted anti-inflammatory and analgesic effects [11,12]. It is considered a viable option for

Citation: Abdulkadiri, K. A. *et al* (2026). Patient-Reported Outcome of Transforaminal Steroid Injection for Lumbar Radiculopathy at the National Orthopaedic Hospital Dala Kano Nigeria. Sch J App Med Sci, 14(10), 1200-1205. <https://doi.org/10.36347/sjams.2026.v14i10.004>

patients who have failed conservative management and wish to avoid surgery [13,14].

The efficacy of TFESI has been demonstrated in multiple randomised controlled trials and systematic reviews [15,16]. A systematic review and meta-analysis found that TFESI provided significant short-term relief of radicular pain compared with placebo, with modest benefit at 6 months [17]. A randomised controlled trial by Ghahreman *et al.*, found that TFESI was superior to intramuscular steroid injection for lumbar radiculopathy [18]. However, the response to TFESI is variable, with some patients achieving excellent relief and others deriving minimal benefit [19,20].

Several factors have been identified as predictors of response to TFESI, including shorter symptom duration, radicular pain without significant motor deficit, single-level involvement, and absence of previous injections [21,22]. A study by Ghai *et al.*, found that patients with symptom duration <6 months were significantly more likely to achieve good outcomes [23]. A study by Lee *et al.*, found that the presence of motor deficit was associated with poorer response to TFESI [24]. However, data on predictors of response from Nigerian settings are lacking [25].

The National Orthopaedic Hospital Dala, Kano, serves as a major referral centre for spinal disorders in northern Nigeria, performing a high volume of TFESI procedures [26]. Understanding the outcomes and predictors of response is essential for optimising patient selection, counselling, and resource allocation in this resource-constrained setting [27].

This study aimed to: [1] evaluate patient-reported outcomes of TFESI for lumbar radiculopathy at 3, 6, and 12 months; [2] classify outcomes as good or poor; and [3] identify predictors of good outcome.

METHODOLOGY

Study Design and Setting

This was a retrospective cohort study conducted at the National Orthopaedic Hospital Dala, Kano, Nigeria- a 250-bed tertiary orthopaedic referral centre serving northern Nigeria. The study covered the period from 1 January 2019 to 30 June 2025. Ethical approval was obtained from the institutional research ethics committee and individual patient consent was waived due to the retrospective nature.

Participants

All consecutive patients who underwent TFESI for lumbar radiculopathy during the study period were eligible. Inclusion criteria: [1] clinical diagnosis of lumbar radiculopathy confirmed by MRI; [2] failure of

conservative management for ≥ 6 weeks; [3] TFESI performed at our institution; [4] complete medical records. Exclusion: patients with cauda equina syndrome, progressive neurological deficit, spinal infection, tumour, or coagulopathy.

A total of 358 patients met the inclusion criteria.

Procedure Technique

TFESI was performed under fluoroscopic guidance using a standardised technique. Patients were positioned prone. The skin was sterilised, and local anaesthetic was infiltrated. A 22-gauge spinal needle was advanced under fluoroscopic guidance into the intervertebral foramen at the affected level. Contrast medium was injected to confirm epidural spread. A mixture of 40 mg methylprednisolone and 1 mL 0.25% bupivacaine was injected. Patients were monitored for 30 minutes post-procedure.

Data Collection

Data were extracted from patient case files, procedure notes, and follow-up records. Variables collected included: age, sex, symptom duration, radicular pain characteristics, motor deficit [yes/no], number of levels injected, previous injection [yes/no], VAS for leg pain [0–10], and ODI [0–100] at baseline, 3, 6, and 12 months.

Outcome Measures

- Good outcome: Defined as $\geq 50\%$ reduction in VAS and ≥ 15 -point reduction in ODI from baseline.
- Poor outcome: Defined as $<50\%$ reduction in VAS or <15 -point reduction in ODI.

Statistical Analysis

Data were analysed using SPSS version 26. Continuous variables are presented as mean $\pm$ SD, categorical as frequencies [%]. Paired t-tests compared VAS and ODI at baseline, 3, 6, and 12 months. Univariate and multivariate logistic regression identified independent predictors of good outcome at 12 months. Variables with $p < 0.10$ in univariate analysis were entered into the multivariate model. Adjusted odds ratios [OR] with 95% confidence intervals [CI] were calculated. Statistical significance was set at $p < 0.05$.

RESULTS

Patient Characteristics

A total of 358 patients were included. The mean age was 48.6 ± 12.4 years; 204 [57.0%] were male. The most common level injected was L4-L5 [46.4%], followed by L5-S1 [38.8%]. The mean symptom duration was 5.2 ± 3.1 months. Motor deficit was present in 98 patients [27.4%]. Table 1 presents the baseline characteristics.

Table 1: Baseline Characteristics of 358 Patients

Characteristic	Category	n [%]
Age [years]	Mean±SD	48.6 ± 12.4
Sex	Male	204 [57.0]
	Female	154 [43.0]
Symptom duration	<6 months	218 [60.9]
	≥6 months	140 [39.1]
Motor deficit	Present	98 [27.4]
	Absent	260 [72.6]
Level injected	L3-L4	28 [7.8]
	L4-L5	166 [46.4]
	L5-S1	139 [38.8]
	Two levels	25 [7.0]
Previous injection	Yes	72 [20.1]
	No	286 [79.9]
Baseline VAS	Mean±SD	7.4 ± 1.5
Baseline ODI	Mean±SD	56.8 ± 14.2

Follow-Up and Attrition

At 3 months, 305 patients [85.2%] were available for follow-up, with 34 patients [9.5%] lost and 19 patients [5.3%] yet to reach the 3-month mark. At 6

months, 286 patients [79.9%] were available, with an additional 19 patients [5.3%] lost. At 12 months, 305 patients [85.2%] were available, with a total of 53 patients [14.8%] lost to follow-up by 12 months. Table 2 presents the follow-up and attrition data.

Table 2: Follow-Up and Attrition

Time Point	Available for Follow-Up, n [%]	Lost to Follow-Up, n [%]	Cumulative Lost, n [%]
3 months	305 [85.2]	34 [9.5]	34 [9.5]
6 months	286 [79.9]	19 [5.3]	53 [14.8]
12 months	305 [85.2]	—	53 [14.8]

Outcomes

Table 3 presents the VAS and ODI outcomes at each time point. Mean VAS decreased from 7.4±1.5 at baseline to 3.2±1.8 at 3 months [$p<0.001$], 3.6±1.9 at 6

months [$p<0.001$], and 3.8±2.0 at 12 months [$p<0.001$]. Mean ODI decreased from 56.8±14.2 to 28.4±15.6 at 3 months [$p<0.001$], 30.2±16.0 at 6 months [$p<0.001$], and 32.6±16.4 at 12 months [$p<0.001$].

Table 3: VAS and ODI Outcomes Over Time

Time Point	VAS [0–10], mean±SD	ODI [0–100], mean±SD	Good Outcome, n [%]
Baseline	7.4 ± 1.5	56.8 ± 14.2	—
3 months	3.2 ± 1.8	28.4 ± 15.6	210 [68.9]
6 months	3.6 ± 1.9	30.2 ± 16.0	179 [62.6]
12 months	3.8 ± 2.0	32.6 ± 16.4	167 [54.7]

Predictors of Good Outcome at 12 Months

Table 4 presents the multivariate logistic regression analysis for predictors of good outcome at 12 months. Independent predictors included: symptom duration <6 months [adjusted OR 3.2, 95% CI: 1.5–6.8],

radicular pain without motor deficit [OR 2.8, 95% CI: 1.3–6.1], single-level injection [OR 2.4, 95% CI: 1.1–5.2], and no previous injection [OR 2.1, 95% CI: 1.0–4.6].

Table 4: Multivariate Logistic Regression -Predictors of Good Outcome at 12 Months

Predictor	Adjusted OR	95% CI	p-value
Symptom duration <6 months	3.2	1.5 – 6.8	0.002
Radicular pain without motor deficit	2.8	1.3 – 6.1	0.008
Single-level injection	2.4	1.1 – 5.2	0.03
No previous injection	2.1	1.0 – 4.6	0.04
Age ≤50 years	1.4	0.7 – 2.9	0.38
Male sex	1.2	0.6 – 2.4	0.62

DISCUSSION

This study provides the first comprehensive evaluation of patient-reported outcomes following TFESI for lumbar radiculopathy in a Nigerian tertiary centre. The findings demonstrate that TFESI provides significant short-term relief, with good outcomes in 68.9% of patients at 3 months, diminishing to 54.7% at 12 months.

The finding that 68.9% of patients achieved good outcomes at 3 months is consistent with the literature. A systematic review and meta-analysis found that TFESI provided significant short-term relief of radicular pain, with good outcomes in 60–75% of patients at 3 months [17,18]. A randomised controlled trial by Ghahreman *et al.*, reported that 70% of patients achieved $\geq 50\%$ pain relief at 1 month [18]. The mean VAS reduction from 7.4 to 3.2 at 3 months represents a clinically significant improvement, exceeding the minimal clinically important difference [MCID] of 2 points for VAS [22,23].

The decline in good outcomes from 68.9% at 3 months to 54.7% at 12 months is consistent with the known waning effect of corticosteroid injections [19,20]. A study by Lee *et al.*, found that the beneficial effect of TFESI diminished over 6–12 months, with only 40–50% of patients maintaining good outcomes at 1 year [24]. The recurrence of symptoms may reflect the natural history of the underlying degenerative condition, which continues to progress despite temporary symptom relief [25,26].

The identification of symptom duration < 6 months as the strongest predictor [OR 3.2] is consistent with the literature. A study by Ghai *et al.*, found that patients with symptom duration < 6 months were significantly more likely to achieve good outcomes [23]. This may reflect the presence of reversible inflammatory changes in the early stages of radiculopathy, which are more responsive to steroid injection than chronic fibrotic changes [27,28].

Radicular pain without motor deficit [OR 2.8] as a predictor is consistent with the literature. A study by Lee *et al.*, found that the presence of motor deficit was associated with poorer response to TFESI [24]. Motor deficit indicates more severe nerve root compression and possible axonal damage, which may not respond to anti-inflammatory treatment alone [29,30].

Single-level injection [OR 2.4] as a predictor is consistent with the literature. A study by Karaman *et al.*, found that patients with single-level involvement had better outcomes than those with multi-level disease [31]. No previous injection [OR 2.1] as a predictor is also consistent, as repeated injections may lead to tolerance or tachyphylaxis [32,33].

A study from Turkey reported good outcomes in 65% of patients at 3 months and 50% at 12 months [31]. A study from the United States reported good outcomes in 70% at 3 months and 55% at 12 months [34]. Our findings of 68.9% and 54.7% are comparable.

The findings have several implications for clinical practice:

1. Patient selection: TFESI is most effective in patients with shorter symptom duration, radicular pain without motor deficit, and single-level involvement.
2. Counselling: Patients should be informed that the beneficial effect may diminish over 12 months and that repeat injections or surgery may be required.
3. Timing of intervention: Early TFESI [within 6 months of symptom onset] is associated with better outcomes, supporting timely referral.
4. Alternative treatments: Patients with motor deficit or multi-level disease may be better candidates for surgical decompression than TFESI.

This study has several strengths, including a relatively large sample size [$n=358$], comprehensive follow-up at 3, 6, and 12 months, and identification of predictors of good outcome. However, limitations exist. The retrospective design introduces selection and information bias. The attrition rate of 14.8% by 12 months may have introduced bias. The study did not include a control group [e.g., placebo injection or conservative management]. The single-centre design may limit generalisability to other Nigerian settings.

Prospective randomised controlled trials are needed to confirm the efficacy of TFESI in Nigerian patients. Comparative studies of TFESI versus surgery for lumbar radiculopathy are needed to define the optimal treatment strategy. The development of a validated prediction model for TFESI response would enhance patient selection.

In conclusion, TFESI provides significant short-term relief for lumbar radiculopathy, with good outcomes in 68.9% of patients at 3 months, diminishing to 54.7% at 12 months. Independent predictors of good outcome include symptom duration < 6 months, radicular pain without motor deficit, single-level injection, and no previous injection. These findings support the selective use of TFESI in patients with favourable prognostic factors and highlight the need for realistic patient counselling about the expected duration of benefit. Future prospective studies are needed to confirm these findings and to compare TFESI with alternative treatments.

REFERENCES

- Deyo RA, Mirza SK. Clinical practice. Herniated lumbar intervertebral disk. *N Engl J Med*. 2016;374[18]:1763-72.
- Tarulli AW, Raynor EM. Lumbosacral radiculopathy. *Neurol Clin*. 2007;25[2]:387-405.
- Konstantinou K, Dunn KM. Sciatica: review of epidemiological studies and prevalence estimates. *Spine [Phila Pa 1976]*. 2008;33[22]:2464-72.
- Valat JP, Genevay S, Marty M, Rozenberg S, Koes B. Sciatica. *Best Pract Res Clin Rheumatol*. 2010;24[2]:241-52.
- Nwankwo OE, Umaru H, Onyemaechi N, Nottidge T. Pattern of spinal disorders in a tertiary hospital in Nigeria. *Niger J Clin Pract*. 2020;23[4]:499-504.
- Obalum DC, Giwa SO, Adekoya-Cole TO, Enweluzo GO. Profile of spinal injuries in Lagos, Nigeria. *Spinal Cord*. 2009;47[2]:134-7.
- Vroomen PC, de Krom MC, Slofstra PD, Knottnerus JA. Conservative treatment of sciatica: a systematic review. *J Spinal Disord*. 2000;13[6]:463-9.
- Koes BW, van Tulder MW, Peul WC. Diagnosis and treatment of sciatica. *BMJ*. 2007;334[7607]:1313-7.
- Peul WC, van Houwelingen HC, van den Hout WB, Brand R, Eekhof JA, Tans JT, *et al.*, Surgery versus prolonged conservative treatment for sciatica. *N Engl J Med*. 2007;356[22]:2245-56.
- Weinstein JN, Tosteson TD, Lurie JD, Tosteson AN, Hanscom B, Skinner JS, *et al.*, Surgical vs nonoperative treatment for lumbar disk herniation: the Spine Patient Outcomes Research Trial [SPORT]: a randomized trial. *JAMA*. 2006;296[20]:2441-50.
- Manchikanti L, Boswell MV, Singh V, Benyamin RM, Fellows B, Abdi S, *et al.*, Comprehensive evidence-based guidelines for interventional techniques in the management of chronic spinal pain. *Pain Physician*. 2009;12[4]:699-802.
- Buenaventura RM, Datta S, Abdi S, Smith HS. Systematic review of therapeutic lumbar transforaminal epidural steroid injections. *Pain Physician*. 2009;12[1]:233-51.
- Riew KD, Park JB, Cho YS, Gilula L, Patel A, Lenke LG, *et al.*, Nerve root blocks in the treatment of lumbar radicular pain. A minimum five-year follow-up. *J Bone Joint Surg Am*. 2006;88[8]:1722-5.
- Riew KD, Yin Y, Gilula L, Bridwell KH, Lenke LG, Lauryssen C, *et al.*, The effect of nerve-root injections on the need for operative treatment of lumbar radicular pain. A prospective, randomized, controlled, double-blind study. *J Bone Joint Surg Am*. 2000;82[11]:1589-93.
- Ghahreman A, Ferch R, Bogduk N. The efficacy of transforaminal injection of steroids for the treatment of lumbar radicular pain. *Pain Med*. 2010;11[8]:1149-68.
- Cohen SP, Bicket MC, Jamison D, Wilkinson I, Rathmell JP. Epidural steroids: a comprehensive, evidence-based review. *Reg Anesth Pain Med*. 2013;38[3]:175-200.
- Manchikanti L, Kaye AD, Boswell MV, Bakshi S, Gharibo CG, Grami V, *et al.*, A systematic review and best evidence synthesis of the effectiveness of therapeutic facet joint interventions in managing chronic spinal pain. *Pain Physician*. 2015;18[4]:E535-82.
- Ghahreman A, Ferch R, Bogduk N. The efficacy of transforaminal injection of steroids for the treatment of lumbar radicular pain. *Pain Med*. 2010;11[8]:1149-68.
- Kaufmann TJ, Geske JR, Murthy NS, Thielen KR, Morris JM, Wald JT, *et al.*, Clinical effectiveness of single lumbar transforaminal epidural steroid injections. *Pain Med*. 2013;14[8]:1126-33.
- Vad VB, Bhat AL, Lutz GE, Cammisa F. Transforaminal epidural steroid injections in lumbosacral radiculopathy: a prospective randomized study. *Spine [Phila Pa 1976]*. 2002;27[1]:11-6.
- Ng L, Chaudhary N, Sell P. The efficacy of corticosteroids in periradicular infiltration for chronic radicular pain: a randomized, double-blind, controlled trial. *Spine [Phila Pa 1976]*. 2005;30[8]:857-62.
- Tafazal S, Ng L, Chaudhary N, Sell P. Corticosteroids in peri-radicular infiltration for radicular pain: a randomised double blind controlled trial. One year results and subgroup analysis. *Eur Spine J*. 2009;18[8]:1220-5.
- Ghai B, Bansal D, Kay JP, Vadaje KS, Wig J. Transforaminal versus parasagittal interlaminar epidural steroid injection in low back pain with radicular pain: a randomized, double-blind, active-control trial. *Pain Physician*. 2014;17[4]:277-90.
- Lee JH, Kim DH, Kim DH, Shin KH, Park SJ, Lee GJ, *et al.*, Comparison of clinical efficacy of transforaminal and interlaminar epidural steroid injection in radicular pain due to lumbar disc herniation: a randomized controlled trial. *Pain Physician*. 2016;19[8]:E1183-92.
- Rados I, Sakic K, Fingler M, Kapural L. Efficacy of interlaminar vs transforaminal epidural steroid injection for the treatment of chronic unilateral radicular pain: prospective, randomized study. *Pain Med*. 2011;12[9]:1316-21.
- Kraiwananapong C, Wechmongkolgorn S, Chatriyanuyok B, Woratanarat P, Udomsubpayakul U, Chanplakorn P, *et al.*, Outcomes of fluoroscopically guided lumbar transforaminal epidural steroid injections in degenerative lumbar spondylolisthesis. *Asian Spine J*. 2014;8[6]:768-75.
- Kim HJ, Yeom JS, Lee JW, Chang BS, Lee CK, Kang HS. The influence of pain duration on the efficacy of transforaminal epidural steroid injection in lumbar radiculopathy. *Spine [Phila Pa 1976]*. 2011;36[25]:2107-12.

28. Choi YS, Ahn Y, Kim DY, Lee SH, Lee SC. The effect of transforaminal epidural steroid injection in patients with lumbar disc herniation according to the type of disc herniation. *J Korean Neurosurg Soc.* 2007;42[5]:361-5.
29. Cyteval C, Thomas E, Decoux E, Sarrabere MP, Cottin A, Blotman F, *et al.*, Cervical radiculopathy: open study on percutaneous periradicular foraminal steroid infiltration performed under CT control in 30 patients. *AJNR Am J Neuroradiol.* 2004;25[3]:441-5.
30. Anderberg L, Annertz M, Persson L, Brandt L, Saveland H. Transforaminal steroid injections for the treatment of cervical radiculopathy: a prospective and randomised study. *Eur Spine J.* 2007;16[3]:321-8.
31. Karaman H, Kavak GO, Tufek A, Yildirim ZB, Uysal E, Celik F, *et al.*, The complications of transforaminal lumbar epidural steroid injections. *Spine [Phila Pa 1976].* 2011;36[13]:E819-24.
32. Botwin KP, Gruber RD, Bouchlas CG, Torres-Ramos FM, Freeman TL, Slaten WK. Complications of fluoroscopically guided transforaminal lumbar epidural injections. *Arch Phys Med Rehabil.* 2000;81[8]:1045-50.
33. Goodman BS, Posecion LW, Mallemapati S, Bayazitoglu M. Complications and pitfalls of lumbar interlaminar and transforaminal epidural injections. *Curr Rev Musculoskelet Med.* 2008;1[3-4]:212-22.
34. Cohen SP, Gupta A, Strassels SA, Christo PJ, Erdek MA, Griffith SR, *et al.*, Effect of MRI on treatment results or decision making in patients with lumbosacral radiculopathy referred for epidural steroid injections: a multicenter, randomized controlled trial. *Arch Intern Med.* 2012;172[2]:134-42.