

Treatments for Sciatica

ADAM STEPHENSON, DO; GARY KELSBERG, MD; and JON O. NEHER, MD, *University of Washington at Valley Family Medicine Residency, Renton, Washington*

LEILANI ST. ANNA, MLIS, AHIP, *University of Washington Health Sciences Library, Seattle, Washington*

 More online
at <http://www.aafp.org/afp>.

Clinical Inquiries provides answers to questions submitted by practicing family physicians to the Family Physicians Inquiries Network (FPIN). Members of the network select questions based on their relevance to family medicine. Answers are drawn from an approved set of evidence-based resources and undergo peer review. The strength of recommendations and the level of evidence for individual studies are rated using criteria developed by the Evidence-Based Medicine Working Group (<http://www.cebm.net/?o=1025>).

The complete database of evidence-based questions and answers is copyrighted by FPIN. If interested in submitting questions or writing answers for this series, go to <http://www.fpin.org> or email: questions@fpin.org.

This series is coordinated by John E. Delzell, Jr., MD, MSPH, Assistant Medical Editor.

A collection of FPIN's Clinical Inquiries published in *AFP* is available at <http://www.aafp.org/afp/fpin>.

Clinical Question

How effective are common treatments for sciatica?

Evidence-Based Answer

Surgical discectomy can be offered to patients with refractory sciatica (Strength of Recommendation [SOR]: B, based on multiple randomized controlled trials [RCTs] of moderate quality), but there is only modest, short-term improvement in leg pain and disability scores. Epidural steroid injections may be offered to patients with sciatica of more than six months' duration. (SOR: A, based on a meta-analysis of RCTs.) However, there is minimal short-term improvement in leg pain and disability scores with this treatment.

Nonsteroidal anti-inflammatory drugs (NSAIDs) and systemic steroids should not be used in patients with sciatica. (SOR: A, based on a meta-analysis of RCTs.) Topiramate (Topamax) and pregabalin (Lyrica) should not be used in patients with sciatica. (SOR: B, based on small RCTs.) All of these medications have adverse effects. Traction and bed rest should not be offered to patients with sciatica because they do not improve pain or disability. (SOR: A, based on a systematic review of RCTs.)

Evidence Summary

Surgical Interventions. A Cochrane review found three moderate-quality RCTs comparing surgery with conservative management for low back pain with sciatica that had not improved after 12 weeks.¹ The outcomes could not be combined in a meta-analysis. One RCT with 501 patients (mean age = 42 years) found that patients who underwent open discectomy (compared with nonoperative treatment) had minimally improved sciatica

pain and disability as measured by the Oswestry Disability Index at three months, but no differences at one and two years. A second RCT with 88 patients found that when compared with physical therapy and education, microdiscectomy in patients with small to moderate disk herniation modestly reduced disability scores at three and 12 months, but not at two years. A third RCT that compared microdiscectomy with epidural steroid injection found that surgery moderately improved leg pain and disability scores, and slightly improved leg strength, but did not improve back pain. None of the improvements persisted beyond six months (*eTable A*). Another RCT followed patients for five years after surgery and found no differences in disability scores, leg and back pain, or global perceived recovery between surgical and conservative management.²

Epidural Steroid Injections. A meta-analysis of 23 placebo-controlled RCTs evaluating epidural steroid injections for sciatica found small improvements in leg pain and disability scores at two to 12 weeks that did not persist.³ There were no differences at one year. The meta-analysis included patients who had symptoms for six months, and there were no reports of adverse effects.

Nonsteroidal Anti-Inflammatory Drugs. A meta-analysis of four placebo-controlled RCTs with a total of 947 patients 46 to 52 years of age who had acute sciatica of three to 14 days' duration found no improvement in pain scores after treatment with nonsteroidal anti-inflammatory drugs⁴ (*eTable B*). Medications included meloxicam (Mobic), lornoxicam (not available in the United States), piroxicam (Feldene), and diclofenac. Gastrointestinal adverse effects were common (5% to 10%).

Clinical Inquiries

Systemic Steroids. A meta-analysis evaluating systemic steroid treatments for acute to subacute sciatica found no significant improvements in pain or overall response rates, but two times the risk of adverse effects and surgery.⁵

Other Medications. An RCT with 29 patients (mean age = 53 years) treated with topiramate found no improvements in pain or disability at four weeks.⁴ An RCT with 217 patients (mean age = 53 years) treated with pregabalin found no improvement in pain at four weeks.⁴ An RCT with 50 patients (mean age = 40 years) treated with gabapentin (Neurontin, 900 to 3,600 mg per day) found a 27% improvement in pain scores ($P < .001$).⁴

Traction. A systematic review of 32 RCTs found that traction produced no benefit compared with sham traction or other conservative treatments.⁶ The authors evaluated subjective pain, disability, global subjective improvement, and return to work. Traction was associated with increased pain in 15% to 30% of patients.

Bed Rest. A systematic review of 10 RCTs found no differences in pain relief and functional status in patients with low back pain and sciatica who were advised to rest in bed vs. stay active.⁷

Copyright Family Physicians Inquiries Network. Used with permission.

Address correspondence to Gary Kelsberg, MD, at gary_kelsberg@valleymed.org. Reprints are not available from the authors.

Author disclosure: No relevant financial affiliations.

REFERENCES

1. Gibson JN, Waddell G. Surgical interventions for lumbar disc prolapse: updated Cochrane Review. *Spine (Phila Pa 1976)*. 2007;32(16):1735-1747.
2. Lequin MB, Verbaan D, Jacobs WC, et al. Surgery versus prolonged conservative treatment for sciatica: 5-year results of a randomised controlled trial. *BMJ Open*. 2013;3(5):pii:e002534.
3. Pinto RZ, Maher CG, Ferreira ML, et al. Epidural corticosteroid injections in the management of sciatica: a systematic review and meta-analysis. *Ann Intern Med*. 2012;157(12):865-877.
4. Pinto RZ, Maher CG, Ferreira ML, et al. Drugs for relief of pain in patients with sciatica: systematic review and meta-analysis. *BMJ*. 2012;344:e497.
5. Roncoroni C, Baillet A, Durand M, Gaudin P, Juvin R. Efficacy and tolerance of systemic steroids in sciatica: a systematic review and meta-analysis. *Rheumatology (Oxford)*. 2011;50(9):1603-1611.
6. Wegner I, Widyahening IS, van Tulder MW, et al. Traction for low-back pain with or without sciatica. *Cochrane Database Syst Rev*. 2013;(8):CD003010.
7. Dahm KT, Brurberg KG, Jamtvedt G, Hagen KB. Advice to rest in bed versus advice to stay active for acute low-back pain and sciatica. *Cochrane Database Syst Rev*. 2010;(6):CD007612. ■

NOTICE OF CLASS ACTION AND PROPOSED SETTLEMENT IN BRIDGEPORT PAIN CONTROL CENTER, LTD. v. MEDPLUS, INC. and QUEST DIAGNOSTICS INCORPORATED, (N.D. Ill. No. 13-C-7465)

TO: All persons with fax numbers who, on or after October 17, 2009 through and including March 31, 2015, received a "Care360 Health Records Debate" fax or received any other fax advertising the commercial availability or quality of any property, good, or services of MedPlus or Quest that did not contain an opt out notice as described in 47 U.S.C. § 227 (the "Settlement Class").

This notice relates to the settlement of a class action lawsuit that stems from allegations by the named Plaintiff that MedPlus Inc. ("MedPlus") and/or Quest Diagnostics Incorporated ("Quest") (collectively, "Defendants") sent unsolicited advertisements by fax, purportedly in violation of the Telephone Consumer Protection Act, Illinois Consumer Fraud Act and Illinois common law (conversion, private nuisance, and trespass to chattels). Such allegations and claims have been expressly denied by Defendants; however, a settlement has been reached between the Parties to this Litigation.

If you received a "Care360 Health Records Debate" fax or received a fax advertising the commercial availability or quality of any property, good, or services of MedPlus or Quest that did not contain an opt out notice as described in 47 U.S.C. § 227, your rights may be affected by the proposed settlement of this class action lawsuit. You may be entitled to money. This notice is intended only as a summary of the lawsuit and proposed settlement. It is not a complete statement of the lawsuit or the proposed settlement. The Settlement Agreement is available on www.MedPlusQuestfaxsettlement.com, from Settlement Class Counsel at www.edcombs.com, or at the Clerk's Office, U.S. District Court for the Northern District of Illinois, 219 S. Dearborn St., Chicago, IL 60604. To submit a claim, go to www.MedPlusQuestfaxsettlement.com and complete a claim form by **JULY 8, 2015**. The deadline to opt out of or object to the settlement is **JULY 8, 2015**. The hearing to approve the settlement will be held on **AUGUST 25, 2015 at 10:00 a.m.** before Judge Blakey, Courtroom 1725, of the U.S. District Court for the Northern District of Illinois. If you have questions about this notice or the proposed settlement, you may contact Settlement Class Counsel at EDELMAN, COMBS, LATTURNER & GOODWIN, LLC, 20 S. Clark St., Suite 1500, Chicago, IL 60603 (312) 917-4504.

eTable A. Common Treatments for Sciatica

<i>Intervention</i>	<i>Study characteristics</i>	<i>Patient characteristics</i>	<i>Outcomes</i>
Surgical interventions			
Microdiskectomy vs. epidural steroid injection ^{A1}	RCT followed for 3 years	n = 100 patients; mean age = 40 years	5% absolute improvement in leg strength at 3 months ($P < .05$) 30% improvement in leg and back pain by visual analog scale at 3 months ($P < .001$) and 6 months ($P = .03$) ODI score was 30% better at 3 months ($P < .001$)
Microdiskectomy vs. physical therapy and education ^{A1}	RCT	n = 88 patients	ODI score improved 12% and 11% at 3 and 12 months, respectively (95% CI, 4.5% to 20% and 4% to 17%) ODI score was nonsignificant at 2 years
Open diskectomy vs. conservative treatment ^{A2}	RCT	n = 283 patients; mean age = 41 years	Leg and back pain improved 25% at 8 weeks ($P < .05$) Nonsignificant for any outcome at 1, 2, and 5 years
Open diskectomy vs. nonoperative treatment ^{A1}	RCT followed for 4 years	n = 501 patients; mean age = 42 years	ODI score improved 5% (95% CI, 0.2% to 9%) 2% reported less bothersome symptoms at 3 months (95% CI, 1% to 3%) No improvement in Short Form-36 scale for body pain and physical function All outcomes nonsignificant at 1 and 2 years
Other treatments			
Continued activity vs. bed rest ^{A3}	Systematic review of 10 RCTs	N = 1,923 patients	No difference in pain relief scores or functional status
Epidural steroid injection vs. placebo injection ^{A4}	Meta-analysis of 23 RCTs	N = 2,334 patients; mean age = 40 to 53 years	6.2% reduction in leg pain at 2 to 12 weeks (95% CI, 3.0% to 9.4%) 3.1% reduction in disability at 2 to 12 weeks (95% CI, 1.2% to 5.0%) All outcomes nonsignificant at 12 months
Traction vs. other conservative treatment ^{A5}	Systematic review of 32 RCTs	N = 2,762 patients	No difference in pain, ODI score, time to return to work, or global subject scale

CI = confidence interval; ODI = Oswestry Disability Index (0- to 100-point scale); RCT = randomized controlled trial.

Information from:

A1. Gibson JN, Waddell G. Surgical interventions for lumbar disc prolapse: updated Cochrane Review. *Spine* (Phila Pa 1976). 2007;32(16):1735-1747.

A2. Lequin MB, Verbaan D, Jacobs WC, et al. Surgery versus prolonged conservative treatment for sciatica: 5-year results of a randomised controlled trial. *BMJ Open*. 2013;3(5):pii:e002534.

A3. Dahm KT, Brurberg KG, Jamtvedt G, Hagen KB. Advice to rest in bed versus advice to stay active for acute low-back pain and sciatica. *Cochrane Database Syst Rev*. 2010;(6):CD007612.

A4. Pinto RZ, Maher CG, Ferreira ML, et al. Epidural corticosteroid injections in the management of sciatica: a systematic review and meta-analysis. *Ann Intern Med*. 2012;157(12):865-877.

A5. Wegner I, Widyahening IS, van Tulder MW, et al. Traction for low-back pain with or without sciatica. *Cochrane Database Syst Rev*. 2013;(8):CD003010.

eTable B. Common Medications Used to Treat Sciatica

<i>Medication</i>	<i>Study characteristics</i>	<i>Patient characteristics</i>	<i>Outcomes</i>
Gabapentin (Neurontin, 900 to 3,600 mg per day) vs. placebo ^{B1}	RCT	n = 50 patients; mean age = 40 years	27% improvement in pain ($P < .001$)
Nonsteroidal anti-inflammatory drugs (meloxicam [Mobic] 7.5 to 15 mg, lornoxicam* 8 mg, piroxicam [Feldene] 20 mg, diclofenac 50 to 100 mg) ^{B1}	Meta-analysis of 4 RCTs	N = 947 patients; mean age = 46 to 52 years	No improvement in overall or leg pain scores Adverse effects (e.g., nausea, abdominal pain, diarrhea) in 5% to 10%
Pregabalin (Lyrica, 150 to 600 mg per day) vs. placebo ^{B1}	RCT	n = 217 patients; mean age = 53 years	No improvement in mean pain score
Systemic steroids (methylprednisolone 160 to 500 mg, dexamethasone 8 to 64 mg, or prednisone 20 to 60 mg) vs. placebo ^{B2}	Meta-analysis of 7 RCTs	N = 383 patients; mean age = 37 to 46 years	No improvement in overall response rate Adverse effects: 13% steroids vs. 7% placebo (NNH = 17) Surgery rate: 15% steroids vs. 6% placebo (NNH = 11)
Topiramate (Topamax, 50 to 400 mg per day) vs. placebo ^{B1}	Crossover trial	n = 29 patients; mean age = 53 years	No improvement in pain or disability score

NNH = number needed to harm; RCT = randomized controlled trial.

*—Lornoxicam not available in the United States.

Information from:

B1. Pinto RZ, Maher CG, Ferreira ML, et al. Drugs for relief of pain in patients with sciatica: systematic review and meta-analysis. *BMJ*. 2012;344:e497.

B2. Roncoroni C, Baillet A, Durand M, Gaudin P, Juvin R. Efficacy and tolerance of systemic steroids in sciatica: a systematic review and meta-analysis. *Rheumatology (Oxford)*. 2011;50(9):1603-1611.