

# FPIN's Clinical Inquiries

## Gabapentin for Treatment of Radicular Low Back Pain

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### Clinical Question

Is gabapentin (Neurontin) effective for the treatment of radicular low back pain?

### Evidence-Based Answer

Gabapentin is not effective for the treatment of radicular low back pain and is associated with adverse effects. (Strength of Recommendation: B, based on a systematic review of low-quality randomized controlled trials [RCTs].)

### Evidence Summary

A 2017 systematic review and meta-analysis of eight RCTs (N = 874) examined the effectiveness of gabapentin or pregabalin (Lyrica) vs. placebo for the treatment of chronic low back pain.<sup>1</sup> This review searched Medline, EMBASE, and the Cochrane database from inception until December 2016 and included RCTs evaluating the use of gabapentin or pregabalin for more than three months in adults with chronic low back pain with or without leg pain. The review identified three RCTs (n = 185) that specifically examined gabapentin. Compared with the control group, patients who received gabapentin had no significant difference in chronic low back pain (mean difference = -0.22 points on a 0- to 10-point scale; 95% CI, -0.51 to 0.07), with a GRADE rating of very low-quality evidence. There was also

no difference in pain relief between groups (two trials; n = 120; risk ratio [RR] = 0.96; 95% CI, 0.061 to 1.49). Compared with placebo, gabapentin had more adverse effects, including dizziness (three trials; n = 121; RR = 2.0; 95% CI, 1.2 to 3.4; number needed to harm [NNH] = 7), fatigue (three trials; n = 121; RR = 1.9; 95% CI, 1.1 to 3.0; NNH = 8), difficulties with mentation (three trials; n = 121; RR = 3.3; 95% CI, 1.5 to 7.3; NNH = 6); and visual disturbances (three trials; n = 121; RR = 5.7; 95% CI, 1.9 to 17; NNH = 6).

A 2016 double-blind RCT (N = 108) investigated gabapentin as a treatment for chronic low back pain with and without a radicular component.<sup>2</sup> This RCT was included in the 2017 meta-analysis but is reviewed here separately because it was the largest trial and reviewed multiple additional outcomes not included in the systematic review. Participants were adults who had at least a six-month history of daily back pain, primarily in the lumbar region, that affected at least two aspects of everyday life, and a pain score of 2 or greater on a 10-point scale. They discontinued the use of any muscle relaxants, opioids, or antidepressants at least two weeks before study initiation. Exclusion criteria included major medical or psychiatric comorbidities and recent major surgery. The gabapentin arm was a forced titration design with a daily target of 3,600 mg divided into three doses. The placebo

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## CLINICAL INQUIRIES

group also up-titrated the placebo pills. The primary outcome was pain intensity (as measured by the Descriptor Differential Scale of Pain Intensity); secondary outcomes included mood (as measured by the Beck Depression Inventory-II) and everyday function (as measured by the Oswestry Disability Index). At 12 weeks there was a significant decrease from baseline in overall pain scores for both groups ( $P < .0001$ ) but no significant difference between the groups ( $P = .423$ ). There was no difference between radicular and nonradicular pain, and no difference in pain scores based on plasma levels of gabapentin. There was an overall significant decrease in depressive mood symptoms in both groups ( $P < .0001$ ) but no significant difference between the groups ( $P = .519$ ). There was also no significant difference in functionality between groups ( $P = .804$ ).

### Recommendations from Others

A 2017 evidence-based practice guideline from the American College of Physicians examined

noninvasive treatments for nonradicular low back pain and found insufficient evidence to support the use of gabapentin for acute or chronic back pain.<sup>3</sup>

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