

# Study reveals most effective drugs for common type of neuropathic pain

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Richard Barohn, MD, is the lead researcher and executive vice chancellor for health affairs at the University of Missouri Credit: Justin Kelley

More than 20 million people in the U.S. suffer neuropathic pain. At least 25% of those cases are classified as unexplained and considered

cryptogenic sensory polyneuropathy (CSPN). There is no information to guide a physician's drug choices to treat CSPN, but a researcher from the University of Missouri School of Medicine and MU Health Care led a first-of-its-kind prospective comparative effectiveness study.

The study compared four drugs with different mechanisms of action in a large group of patients with CSPN to determine which drugs are most useful for this condition. The study involved 40 sites and enrolled 402 patients with diagnosed CSPN who were 30 years or older and reported a pain score of four or greater on a 10-point scale.

Participants were prescribed one of four medications commonly used to treat CSPN: nortriptyline, a [tricyclic antidepressant](#); duloxetine, a serotonin-norepinephrine reuptake inhibitor; pregabalin, an anti-seizure drug; or mexiletine, an anti-arrhythmic medication. Patients took the prescribed treatment for 12 weeks and were evaluated at four, eight and 12 weeks. Any participant who reported at least a 50% reduction in pain was deemed as demonstrating an efficacious result. Patients who discontinued the treatment drug because of adverse effects were also measured.

"This study went beyond whether the drug reduced [pain](#) to also focus on adverse effects," said Richard Barohn, MD, lead researcher and executive vice chancellor for health affairs at the University of Missouri. "As the first study of its kind, we compared these four drugs in a real-life setting to provide physicians with a body of evidence to support the effective management of peripheral neuropathy and to support the need for newer and more effective drugs for [neuropathic pain](#)."

Nortriptyline had the highest efficacious percentage (25%), and the second-lowest quit rate (38%), giving it the highest level of overall utility. Duloxetine had the second-highest efficacious rate (23%), and lowest drop-out rate (37%). Pregabalin had the lowest efficacy rate (15%)

and Mexiletene had the highest quit rate (58%).

"There was no clearly superior performing [drug](#) in the study," Barohn said. "However, of the four medications, nortriptyline and duloxetine performed better when efficacy and dropouts were both considered. Therefore, we recommend that either nortriptyline or duloxetine be considered before the other medications we tested."

There are other nonnarcotic drugs used to treat painful peripheral neuropathy, including gabapentin, venlafaxine and other sodium channel inhibitors. Barohn said additional comparative effectiveness research studies can be performed on those drugs, so doctors can further build a library of data for the treatment of CSPN. His [goal](#) is to build effectiveness data on nearly a dozen drugs for CSPN.

The study, "Patient Assisted Intervention for Neuropathy: Comparison of Treatment in Real Life Situations (PAIN-CONTRoLS)," was recently published by *JAMA Neurology*.

**More information:** Richard J. Barohn et al, Patient Assisted Intervention for Neuropathy: Comparison of Treatment in Real Life Situations (PAIN-CONTRoLS), *JAMA Neurology* (2020). [DOI: 10.1001/jamaneurol.2020.2590](#)

Provided by University of Missouri

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