



# Effective Health Care

## Pharmacologic Treatment of Neuropathic Pain in Patients with Diabetes

**Topic #:** 0673

**Nomination Date:** 05/11/2016

**Nominator:** American Academy of Neurology (AAN)

**Date:** July 2016

### Summaries of Nomination and Findings

**Nomination:** The nominator is interested in the pharmacologic treatments with the best evidence for treatment of neuropathic pain in patients with diabetes. The nominator is requesting an evidence review to inform an update of the 2011 clinical practice guideline on treatment of painful diabetic neuropathy developed by the American Academy of Neurology, National Association of Neuromuscular and Electrodiagnostic Medicine, and the American Academy of Physical Medicine and Rehabilitation. According to the nominator, the prevalence of neuropathy in patients with diabetes is around 50%. Understanding which medications best treat this pain would allow doctors to treat patients more effectively.

**Findings:** The nomination is both appropriate and important. AHRQ is currently in the process of an evidence review examining pharmacologic and nonpharmacological treatments for diabetic neuropathy, and preventing diabetic peripheral neuropathy complications. A draft of this evidence review will be available for public comment in the near future.

**Recommendation:** After reviewing the protocol, the nominator determined that the in-process review addresses their question of interest. No further activity will be undertaken on this topic.

### Key Questions

Key Question 1. Which medications have the best evidence for treatment of neuropathic pain in patients with diabetes?

Table 1, below, provides a summary of the identified evidence and its relation to the key question.

Table 1. Key question with the identified corresponding evidence review

| Key Question                     | Duplication (Completed and In-Process Evidence Reviews)                                                                                                                                                                                                             | Feasibility (Published and Ongoing)                                                |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| KQ 1:<br>Pharmacologic treatment | Total number of completed or in-progress evidence reviews – 1 <sup>1</sup><br><br><b>In-Process AHRQ Protocol link</b><br><a href="#">Effectiveness of Treatments for Diabetic Peripheral Neuropathy (DPN)</a><br>(Draft available for public comment: forthcoming) | Topic covered by an in-process evidence review, therefore no search was conducted. |

*Abbreviations:* AHRQ=Agency for Healthcare Research and Quality; DPN=Diabetic Peripheral Neuropathy; KQ=Key Question

## **Key Considerations and Points for Discussion**

- We identified an in-process AHRQ review<sup>1</sup> (draft available for public comment is forthcoming) that will examine pharmacologic and nonpharmacological treatments for diabetic neuropathy. The population includes adults age 18 or older with type 1 or type 2 diabetes with peripheral polyneuropathy. Interventions are stratified by preventing complications of DPN and treating symptoms of diabetic neuropathy. Pharmacologic interventions for preventing complications will be focused on glucose control, and nonpharmacological and surgical interventions for preventing complications include foot care, surgical interventions for foot ulcers, and lifestyle interventions (including exercise). Pharmacologic interventions for treating symptoms of diabetic neuropathy include, but are not limited to, pregabalin and gabapentin. Nonpharmacological interventions to improve symptoms of diabetic peripheral neuropathy include acupuncture, physical therapy and exercise, electrical stimulation, and surgical decompression. Outcomes will include benefits (incident or recurrent foot ulcer, falls, perceived fall risk, amputation, health-related quality of life, and physical activity level, reduction in pain, and reduction in paresthesia and numbness) and harms (hypoglycemia, gastrointestinal side effects, neuropsychiatric effects, cardiovascular events, surgical harms, dropouts, and adverse effects). The review will focus on ambulatory care settings for all interventions except surgical interventions.
- We provided the nominator with a link to the protocol. After reviewing the protocol, the nominator determined that the in-process review addresses their question of interest.

## **Authors**

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## **Conflict of Interest**

None of the investigators have any affiliations or financial involvement that conflicts with the material presented in this report.

## **References**

1. AHRQ EPC. Effectiveness of treatments for diabetic peripheral neuropathy [AHRQ Protocol] 2016; <https://effectivehealthcare.ahrq.gov/ehc/products/612/2197/diabetic-neuropathy-protocol-update-160513.pdf>. Accessed July 19, 2016.

## **Appendices**

**Appendix A: Selection Criteria Summary**

**Appendix B: Original Nomination**

## Appendix A. Selection Criteria Summary

| Selection Criteria                                                                                                                                                     | Supporting Data                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Appropriateness</b>                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                       |
| 1a. Does the nomination represent a health care drug, intervention, device, technology, or health care system/setting available (or soon to be available) in the U.S.? | Yes, this topic represents a health care drug and intervention available in the U.S.                                                                                                                                                                                                                                                                                  |
| 1b. Is the nomination a request for an evidence review?                                                                                                                | Yes, this topic is a request for an evidence review.                                                                                                                                                                                                                                                                                                                  |
| 1c. Is the focus on effectiveness or comparative effectiveness?                                                                                                        | Yes, the focus of this review is on comparative effectiveness.                                                                                                                                                                                                                                                                                                        |
| 1d. Is the nomination focus supported by a logic model or biologic plausibility? Is it consistent or coherent with what is known about the topic?                      | Yes, it is biologically plausible. Yes, it is consistent with what is known about the topic.                                                                                                                                                                                                                                                                          |
| <b>2. Importance</b>                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                       |
| 2a. Represents a significant disease burden; large proportion of the population                                                                                        | Yes, AAN states that almost 50% of diabetics will experience neuropathy.                                                                                                                                                                                                                                                                                              |
| 2b. Is of high public interest; affects health care decision making, outcomes, or costs for a large proportion of the US population or for a vulnerable population     | Yes, determining which treatments for neuropathy are best will decrease the likelihood of trial and error, thus decreasing costs.                                                                                                                                                                                                                                     |
| 2c. Represents important uncertainty for decision makers                                                                                                               | Yes, this topic may represent important uncertainty for decision makers when it comes to choosing a course of treatment.                                                                                                                                                                                                                                              |
| 2d. Incorporates issues around both clinical benefits and potential clinical harms                                                                                     | No, the nomination does not explicitly address the benefits and harms of the treatments for diabetic neuropathy.                                                                                                                                                                                                                                                      |
| 2e. Represents high costs due to common use, high unit costs, or high associated costs to consumers, to patients, to health care systems, or to payers                 | Yes, the nomination represents a high cost to consumers.                                                                                                                                                                                                                                                                                                              |
| <b>3. Desirability of a New Evidence Review/Duplication</b>                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                       |
| 3. Would not be redundant (i.e., the proposed topic is not already covered by available or soon-to-be available high-quality evidence review by AHRQ or others)?       | Key question 1 examines the pharmacologic treatments for neuropathic pain in patients with diabetes, and has been found to be fully addressed by an in-process AHRQ review (draft available for public comment: forthcoming). <sup>1</sup> After reviewing the protocol, the nominator determined that the in-process review will address their question of interest. |

## References

1. AHRQ EPC. Effectiveness of treatments for diabetic peripheral neuropathy [AHRQ Protocol] 2016; <https://effectivehealthcare.ahrq.gov/ehc/products/612/2197/diabetic-neuropathy-protocol-update-160513.pdf>. Accessed July 19, 2016.

## Appendix B. Original Nomination

### Topic Suggestion Description

Date submitted: June 9, 2016

Briefly describe a specific question, or set of related questions, about a health care test or treatment that this program should consider.

Which medications have the best evidence for treatment of neuropathic pain in patients with diabetes? An AAN systematic review was performed in 2011 but required an update.

### Importance

Describe why this topic is important.

Painful diabetic neuropathy is common. The lifetime prevalence of neuropathy in patients with diabetes approaches 50%. This becomes even more important as the prevalence of diabetes increases.

### Potential Impact

How will an answer to your research question be used or help inform decisions for you or your group?

Allow all doctors to be able to use medications with the best evidence for this common disorder.

### Technical Experts and Stakeholders

Are there health care-focused, disease-focused, or patient-focused organizations or technical experts that you see as being relevant to this issue? Who do you think we should contact as we consider your nomination? This information will not influence the progress of your suggestion through the selection process, but it may be helpful to those considering your suggestion for further development?

American Academy of Neurology

### Nominator Information

Other Information About You: (optional)

Please choose a description that best describes your role or perspective: (you may select more than one category if appropriate)

American Academy of Neurology (AAN)

May we contact you if we have questions about your nomination?

Yes