

IN BRIEF A Summary of the Evidence

Gabapentin for Adults With Neuropathic Pain: A Review

Key Messages

- Overall, evidence suggests that there is greater reduction in neuropathic pain (NP) with gabapentin compared with placebo in adults who have a variety of conditions, including diabetic peripheral neuropathy and postherpetic pain.
- For short-term treatment of painful diabetic neuropathy and postherpetic neuralgia, gabapentin may be as effective as tricyclic antidepressants, serotonin-norepinephrine reuptake inhibitors, or pregabalin (based on indirect evidence).
- The evidence for the effect of gabapentin on other NP conditions is limited.
- Generally, adverse events were numerically higher with gabapentin compared with placebo, and serious adverse events were few and comparable between the two groups. Adverse events included somnolence, dizziness, peripheral edema, and gait disturbances.
- Gabapentin may be used as a recreational drug, but there is an absence of high-quality data on the prevalence and risk of misuse among patients prescribed the drug to manage NP.
- UK guidelines support the use of gabapentin as one of the first-line treatment options for the management of NP. US guidelines recommend gabapentin as an option for diabetic neuropathy.

Context

Neuropathic pain (NP) is complex and tends to be chronic. Conditions such as spinal cord injury and multiple sclerosis may result in central NP, while examples of peripheral neuropathy include diabetic peripheral neuropathy and postherpetic neuralgia. Painful diabetic neuropathy is estimated to affect 16% to 26% of individuals with diabetes. Prevalence of postherpetic NP is

estimated to range between 8% and 19% in individuals who have had herpes zoster infection. NP may be difficult to manage effectively and treatment often involves pharmacologic and physical therapies. Pharmacological management includes medications such as anticonvulsants, antidepressants, serotonin-norepinephrine reuptake inhibitors, opioid analgesics, cannabinoids, and methadone.

Technology

Gabapentin, an anticonvulsant originally developed for the treatment of epilepsy, is used off-label for treating NP. Its mechanism of action is through binding to calcium channels and modulating calcium influx, resulting in antiepileptic, analgesic, and sedative effects. It is also suggested that gabapentin acts by blocking new synapse formation. Gabapentin is available in various dosages and formulations.

Issue

There is evidence that in high doses, gabapentin may be associated with sedative and dissociative or psychedelic effects. There is also potential for misuse. Black market sales and trading of gabapentin at correctional facilities have been reported.

A review of the clinical evidence on the efficacy, safety, and abuse or misuse of gabapentin, as well as a review of the guidelines for the use of gabapentin in adults with NP, will help inform treatment decisions.

Methods

A limited literature search was conducted of key resources, and titles and abstracts of the retrieved publications were reviewed. Full-text publications were evaluated for final article selection according to predetermined selection criteria (population, intervention, comparator, outcomes, and study designs).

Results

Clinical evidence based on 19 publications – nine systematic reviews, two randomized controlled trials, six non-randomized studies, and two guidelines – was summarized.

CADTH Rapid Response Reports

CADTH has produced two reports on the use of gabapentin for adults with NP:

1. *Gabapentin for Adults With Neuropathic Pain: A Review of the Clinical Evidence and Guidelines* (September 2014; cadth.ca/gabapentin-adults-neuropathic-pain-review-clinical-evidence-and-guidelines).
2. *Gabapentin for Adults With Neuropathic Pain: A Review of the Clinical Efficacy and Safety* (April 2015; cadth.ca/gabapentin-adults-neuropathic-pain-review-clinical-efficacy-and-safety-0).

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