

## ANTICONVULSANTS, SEROTONIN-NOREPINEPHRINE REUPTAKE INHIBITORS, AND TRICYCLIC ANTIDEPRESSANTS IN MANAGEMENT OF NEUROPATHIC PAIN

### TECHNOLOGIES AND CONDITION

Anticonvulsants (ACs) gabapentin and pregabalin, serotonin-norepinephrine reuptake inhibitors (SNRIs) duloxetine and venlafaxine, and tricyclic antidepressants (TCAs) for the first-line treatment of neuropathic pain.

### ISSUE

Given scarce resources and the introduction of new treatments, it is timely to assess the recommended treatment options and determine which first-line treatments will lead to optimal population health.

### METHODS AND RESULTS

Twenty-eight clinical studies were included: 13 of ACs, 10 of TCAs, four of SNRIs, and one that evaluated an SNRI and a TCA. When adjusted against placebo rates TCAs resulted in the highest rates of full and partial pain responses, followed by ACs and SNRIs. Statistically significant differences between drugs could not be detected.

The primary economic analysis demonstrated that TCAs consistently dominated ACs and SNRIs. This was also true in sensitivity analyses, except when lower response rates were assumed for TCAs. TCAs had the lowest expected cost per patient treated of \$1,537, ACs were second (\$1,906), and SNRIs were the most costly (\$2,504).

### IMPLICATIONS FOR DECISION MAKING

- A budget impact analysis showed that the ministry of health would pay about \$107 million per year if all patients were treated with TCAs, assuming 50% coverage.
- If all patients were switched from TCAs to the SNRI duloxetine, the government's portion would increase by \$171 million.
- All drug classes have a similar treatment effect. The number of patients that require treatment to produce a full response ranged from 3.0 (TCAs) to 6.0 (SNRIs).
- TCAs represent an optimal use of healthcare resources in neuropathic pain. First-line treatment with TCAs led to fewer health care costs and more health than the other two drug classes.

This summary is based on a comprehensive health technology assessment available from CADTH's website ([www.cadth.ca](http://www.cadth.ca)): Iskedjian M, Einarson TR, Walker JH, Jovey R, Moulin D. *Anticonvulsants, Serotonin-Norepinephrine Reuptake Inhibitors, and Tricyclic Antidepressants in Management of Neuropathic Pain: A Meta-Analysis and Economic Evaluation* [Technology Report number 116] and *Overview of Anticonvulsants, Serotonin-Norepinephrine Reuptake Inhibitors, and Tricyclic Antidepressants in Management of Neuropathic Pain* [Technology Overview number 49].

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