



Antidepressants for neuropathic pain - a summary of Cochrane systematic review

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Antidepressants for neuropathic pain

A summary of the Cochrane review of “Antidepressants for neuropathic pain”.

Key words

antidepressants, neuropathic pain

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Background

For many years antidepressant drugs have been used to manage neuropathic pain, and are often the first choice treatment. It is not clear, however, which antidepressant is more effective, what role the newer antidepressants can play in treating neuropathic pain, and what adverse effects are experienced by patients.

Methods

To determine the analgesic effectiveness and safety of antidepressant drugs in neuropathic pain a systematic review of randomised controlled trials reporting the analgesic effects of antidepressant drugs in adult patients, with subjective assessment of pain of neuropathic origin, was performed. Studies that included patients with chronic headache and migraine were excluded. Randomised trials of antidepressants in neuropathic pain were identified in MEDLINE (1966 to Oct 2005); EMBASE (1980 to Oct 2005); the Cochrane Central Register of Controlled Trials (CENTRAL) in The Cochrane Library 2005, Issue 3; and the Cochrane Pain, Palliative and Supportive Care Trials Register (May 2002). Additional reports were identified from the reference list of the retrieved papers, and by contacting investigators.

Results

Sixty one randomized controlled trials (66 reports) of 31 antidepressants (3293 participants) were considered eligible for inclusion. Tricyclic antidepressants (TCAs) (17 studies) are effective for the treatment of neuropathic pain and have an number needed to treat (NNT) of 3.60 (95%CI 3 to 4.5) RR (relative risk) 2.1 (95%CI 1.8-2.5) for the achievement of at least moderate pain relief. Venlafaxine (three studies) has an NNT of 3.1 (2.2-5.1) RR 2.2 (95 % CI 1.5-3.1) (three studies). There is limited evidence for the effectiveness of the newer selective serotonin reuptake inhibitor antidepressant drugs (SSRIs), and no studies of serotonin and noradrenalin reuptake inhibitors (SNRIs) were found. There were insufficient data for an assessment of evidence of effectiveness for other antidepressants such as St Johns Wort and L-tryptophan.

For diabetic neuropathy (five studies) the NNT for effectiveness was 1.3 (95%CI 1.2 to 1.5) RR 12.4(95%CI 5.2-29.2) (five studies); for postherpetic neuralgia (four studies) 2.7 (95%CI 2 to 4.1), RR 2.2 (95%CI 1.6-3.1)(four studies). There was some indication of effectiveness in central pain and atypical facial pain few trials and small participant numbers prevents from recommendations. There was evidence that TCAs are not effective in HIV-related neuropathies (two studies).

The number needed to harm(NNH) for major adverse effects defined as an event leading to withdrawal from a study was 28 (95%CI: 17.6-68.9) for amitriptyline and 16.2 (95%CI: 8-436) for venlafaxine. The NNH for minor adverse effects was 6 (95%CI 4.2-10.7) for amitriptyline and 9.6 (95%CI: 3.5-13) for venlafaxine.

Reviewers' conclusions

Antidepressants are effective for a variety of neuropathic pains. Both TCAs and venlafaxine have NNT of approximately three. This means that for approximately every three patients with neuropathic pain who are treated with either of these antidepressants, one will get at least moderate pain relief who would not have done so with placebo. There is evidence to suggest that other antidepressants like SSRIs may be effective, but numbers of participants are insufficient to calculate robust

NNTs. Whether antidepressants prevent the development of neuropathic pain (pre-emptive use) is still unclear.

The quality of reporting in recent trials remains disappointing, in particular insufficient details are provided to enable effectiveness to be assessed. This is marked by an on-going preference to only report mean pain data rather than by reporting the number of participants responding.

Reference

Saarto T and Wiffen PJ. Antidepressants for neuropathic pain. Cochrane Database of Systematic Reviews 2008, Issue 1.

This paper is based on a Cochrane Review published in The Cochrane Library 2008, Issue 1 (see www.thecochranelibrary.com for information). Cochrane Reviews are regularly updated as new evidence emerges and in response to feedback, and The Cochrane Library should be consulted for the most recent version of the review.

The figure legend

A summary statistic of amitriptyline vs. placebo studies in treatment of neuropathic pain. The random effects model is used as there is considerable statistical heterogeneity (I squared is 85% and a small p value for Chi square).

