

Carbamazepine for Acute and Chronic Pain in Adults

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Review Question

To evaluate the analgesic efficacy and adverse effects of carbamazepine for acute and chronic pain management (excluding headaches).

Type of Review

This is a Cochrane review containing 15 randomized, controlled trials (RCTs). Meta-analysis was undertaken when appropriate data were available.

Relevance for Nursing

Anticonvulsant drugs are used to treat epilepsy, but some evidence has shown efficacy in treating various types of neuropathic pain. Various studies have shown carbamazepine (an anticonvulsant drug) to be effective in phantom limb pain, diabetic neuropathy, facial pain, and postsurgical pain. The use of anticonvulsant drugs, however, is not without risk; serious adverse effects include deaths from hematologic reactions. The most common adverse effect is impaired mental and motor function.

Characteristics of the Evidence

The review included 15 RCTs (12 crossover design and three parallel-group) and a total of 629 participants. All studies needed to have investigated the analgesic effects of carbamazepine in patients (any adults who were suffering from a wide range of neuropathic pains), with pain assessment as either the primary or secondary outcome. Carbamazepine

could be administered in any dose or by any route.

Carbamazepine was compared with placebo or active control. Of the 629 participants, 447 were receiving carbamazepine. A wide range of carbamazepine doses were used, ranging from 100–2,400 mg daily. Studies ranged from two three-day crossover comparisons to 42 months. Studies were generally four weeks or shorter with only two eight-week studies lasting more than four weeks.

Only one study had been published in the past 10 years. Because of this and issues with risk of bias (randomization, allocation concealment, and blinding) plus the predominance of crossover trials, which are a possible source of additional bias, caution is needed in the interpretation of the data.

Summary of Key Evidence

Relatively few studies are included in this review. They were all small, outdated, and suffered from methodologic and reporting quality that is considered largely inadequate.

Carbamazepine appears to be effective for some patients in the short term in trigeminal neuralgia and diabetic neuropathy.

Eight studies looked at the use of carbamazepine in the treatment of trigeminal neuralgia. Five were placebo-controlled,

whereas the other three studies compared carbamazepine with tizanidine, tocainide, and pimozone. Carbamazepine produced better results over three weeks than tizanidine; no significant difference was seen between carbamazepine and tocainide over two weeks, and pimozone produced better results over carbamazepine at eight weeks. Pooled data from three studies indicated carbamazepine was more beneficial than placebo (relative benefit = 5.9).

Four studies evaluated the effects of carbamazepine in diabetic neuropathy. Two placebo-controlled studies demonstrated that participants either found improved pain control with carbamazepine or preferred taking carbamazepine against a placebo. The other two studies were active controlled studies. One study compared carbamazepine 200 mg with nortriptyline 10 mg plus fluphenazine 0.5 mg combination over four weeks and found no significant difference in pain or paraesthesia. The other study compared venlafaxine with carbamazepine over 12 weeks. Both drugs demonstrated effect with venlafaxine showing a larger mean effect.

Four percent of participants (12 of 323 participants; nine studies) discontinued the study because of adverse events of taking carbamazepine. An additional 16 participants discontinued because of adverse effects from a combination of carbamazepine and clomipramine. Serious adverse events were not reported consistently in

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