COCHRANE NURSING CARE CORNER

Summaries of Nursing Care-Related Systematic Reviews from the Cochrane Library

Topical capsaicin for chronic neuropathic pain in adults

Question

Is there evidence that topically applied capsaicin is effective and tolerable when used to treat neuropathic pain in adults (16 years or more)?

Relevance to nursing care

Capsaicin is the chemical in chilli peppers that makes them taste hot. It is used topically to treat pain for a range of chronic neuropathic conditions, that is, where damaged nerves cause pain over an extended period of time. Cited uses include the treatment of pain due to postherpetic neuralgia, diabetic neuropathy, HIV neuropathy and surgery. Capsaicin binds to receptors in the skin, which may cause an initial sensation of burning or heat. This enhanced sensitivity is then followed by a period of reduced sensitivity. Repeated applications may result in persistent desensitisation, relieving pain over a period of time.

Capsaicin is in widespread use, but its efficacy is unclear. Nurses who work in the management of pain are likely to be involved in supporting patients who use capsaicin. The initial discomfort felt by many may limit their ability to tolerate it. It is useful for nurses to know how effective capsaicin is, in order to provide informed advice to their clients as to whether the initial discomfort of application is likely to be worthwhile, in terms of longer-term pain relief.

Study characteristics

Nine randomised controlled double-blind trials were included where topical capsaicin was compared with placebo or other active treatment. A minimum of 10 participants per treatment arm was required. Trials were limited to those using adult participants with neuropathic pain of at least moderate intensity (not defined) for at least 3 months. Successful treatment was defined as clinical improvement of at least a 50% reduction in pain, or equivalent measure, reported on categorical scales by patients. Results obtained approximately 8 weeks from the start of the trial, and not less than 4 weeks were used. Results were expressed as

Numbers Needed to Treat (NNT) or conversely Numbers Needed to Harm. All the studies included were rated as being of at least adequate quality.

Six studies, whose methods were sufficiently similar to allow pooling of data, compared regular application of low-dose (0.075%) capsaicin cream with placebo cream. One hundred and ninety-eight participants were treated with topical capsaicin and 191 with placebo. The proportion of participants experiencing successful treatment with capsaicin was 41%. The proportion experiencing successful treatment with placebo was 26%. The NNT to achieve the successful outcome over 6–8 weeks was 6.6, meaning that for every seven participants treated with topical capsaicin, one would experience successful treatment who would not have done so with placebo.

Two studies used a single dose of high-dose (8%) capsaicin applied as a patch to the painful site ($n = 431$) compared with placebo ($n = 278$). Because of the local irritation likely to be caused by the high-strength capsaicin, skin was pre-medicated with local anaesthetic. Data were pooled for analysis. The proportion of participants experiencing successful treatment with capsaicin was 39%. The proportion experiencing successful treatment with placebo was 30%. The NNT for single application of high-dose capsaicin was 12, meaning that for every 12 participants treated with high-strength capsaicin, one would experience successful treatment who would not have done so with placebo.

The remaining study compared application of 0.075% capsaicin with amitriptyline 25–125 mg/day, but there were insufficient data to draw any conclusions concerning the relative efficacy of the treatment.

In summary, all eight studies showed that capsaicin had some effectiveness in treating chronic neuropathic pain in adults. Regular application of the 0.075% cream was more effective than the single 8% skin patch.

Implications for nursing care

Withdrawals from the trials were nearly all due to adverse skin reactions. These included 15% withdrawal using low-dose capsaicin and 3% for participants treated with placebo.

The proportion of participants experiencing a local skin reaction with capsaicin was 63%, for those with placebo this was 24%. The number needed to harm was 2.5. Therefore tolerability is an issue that may limit ability to use the cream. However, in the studies using repeated doses, it was reported that generally, unpleasant sensations including burning, stinging, itching and redness disappeared or were reduced after 1–2 weeks of treatment. Only one participant withdrew from the capsaicin trials because of systemic side-effects, which may have been related to pain. This information can be used by nurses to support patients who are willing to persevere with capsaicin treatment.

The benefits of regular topical treatment with capsaicin 0.075% are comparable to those produced when using systemic medications such as duloxetine 60–120 mg/day (an antidepressant) and pregabalin 150–160 mg/day (an antiepileptic), both of which may be used to treat neuropathic pain (NNT 5.1 and 5.2, respectively). It is likely that a number of clients may prefer to try a topical rather than oral medication because of a lack of systemic side-effects and this option should be fully explained, either as a sole or as a combined treatment. If living with a painful neuropathic condition, even a relatively modest degree of pain relief may be considered worthwhile.

Implications for research

Capsaicin clearly has some effect, but efficacy is limited. However, the strategy of a single high-dose application shows that new methods of application may be developed. New methods of application should be researched if and when they appear. Capsaicin is also used in conjunction with other therapies such as oral amitriptyline, and trials to explore combined effects are likely to be useful to practitioners.

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Reference

1. Derry S, Lloyd R, Moore RA, McQuay HJ. Topical capsaicin for chronic neuropathic pain in adults. *Cochrane Database Syst Rev* 2009; (4). Art. No. CD007393. doi: 10.1002/14651858.CD007393.pub2