

THERAPY: WHOLE BODY CRYOTHERAPY**CONDITION:** Migraines**ARTICLE LINK:** <https://thejournalofheadacheandpain.biomedcentral.com/articles/10.1186/1129-2377-16-5>

Therapeutic effect of intranasal evaporative cooling in patients with migraine: a pilot study[Jitka Vanderpol](#), [Barbara Bishop](#), [Manjit Matharu](#) & [Mark Glencorse](#)

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ABSTRACT**Background**

Cryotherapy is the most common non-pharmacological pain-relieving method. The aim of this pilot study was to ascertain whether intranasal evaporative cooling may be an effective intervention in an acute migraine attack. Studies have previously demonstrated effectiveness of a variety of cryotherapy approaches. Intranasal evaporative cooling due to vascular anatomy, allows the transfer of venous blood from nasal and paranasal mucous membranes to the dura mater, thereby providing an excellent anatomical basis for the cooling processes.

Methods

We conducted a prospective, open-label, observational, pilot study. Twenty-eight patients who satisfied the International Classification of Headache Disorders (ICHD 2) diagnostic criteria for migraine were recruited. A total of 20 treatments were administered in 15 patients. All patients provided pain severity scores and migraine-associated symptoms severity scores (based on a 0–10 visual analogue scale, [VAS]).

Results

Out of the 20 treatments, intranasal evaporative cooling rendered patients' pain and symptoms free immediately after treatment, in 8 of the treatments (40%), a further 10 treatments (50%) resulted in partial pain relief (headache reduced from severe or moderate to mild) and partial symptoms relief. At 2 hours, 9 treatments (45%) provided full pain and symptoms relief, with a further 9 treatments (45%) resulting in partial pain and symptoms relief. At 24 hours, 10 treatments (50%) resulted in patients reporting pain and symptom freedom and 3 (15%) provided partial pain relief. In summary 13 patients (87%) had benefit from the treatment within 2 hours that was sustained at 24 hours.

Conclusions

Intranasal evaporative cooling gave considerable benefit to patients with migraine, improving headache severity and migraine-associated symptoms. A further randomised, placebo controlled, double blinded, parallel clinical trial is required to further investigate the potential of this application.

MEDICAL STUDIES



Trial registration

Clinicaltrials.gov registered trial, ClinicalTrials.gov Identifier: [NCT01898455](https://clinicaltrials.gov/ct2/show/study/NCT01898455).