

Hyperbaric oxygen therapy for thermal burns

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Abstract

Background

Hyperbaric oxygen therapy (HBOT) consists of intermittently administering 100% oxygen at pressures greater than 1 atmosphere in a pressure vessel. This technology has been used to treat a variety of disease states and has been described as helping patients who have sustained burns.

Objectives

The aim of this review was to assess the evidence for the benefit of hyperbaric oxygen treatment (HBOT) for the treatment of thermal burns.

Search strategy

We searched the Cochrane Controlled Trials Register (The Cochrane Library, Issue 3, 2002), MEDLINE (Ovid 1966 to November Week 2, 2003), CINAHL (Ovid 1982 to December Week 2 2003), EMBASE (Ovid 1980 to September 2003), DORCTHIM (Database of Randomised Controlled Trials in Hyperbaric Medicine) from inception to 2003, and reference lists of articles.

Selection criteria

We included all randomised controlled trials that compared the effect of HBOT with no HBOT (no treatment or sham).

Data collection and analysis

Two authors using standardised forms extracted the data independently. Each trial was assessed for internal validity with differences resolved by discussion. Data was extracted and entered into RevMan 4.2.3.

Main results

Four randomised controlled trials were identified, of which two satisfied the inclusion criteria. The trials were of poor methodological quality. As a result, it was difficult to have confidence in the individual results and it would not have been appropriate to attempt to pool the data.

One trial reported no difference in length of stay, mortality, or number of surgeries between the control and HBO-treated groups once these variables were adjusted for the patient's condition. The second trial reported mean healing times that were shorter in patients exposed to HBOT (mean: 19.7 days versus 43.8 days).

Authors' conclusions

This systematic review has not found sufficient evidence to support or refute the effectiveness of HBOT for the management of thermal burns. Evidence from the two randomised controlled trials is insufficient to provide clear guidelines for practice. Further research is needed to better define the role of HBOT in the treatment of thermal burns.