

2005 Feb;71(2):144-51.

Adjuvant hyperbaric oxygen therapy in the management of crush injury and traumatic ischemia: an evidence-based approach.

Department of Surgery, Tulane University School of Medicine and Charity Hospital, New Orleans, Louisiana 70112, USA.

Hyperbaric oxygen therapy (HBO) has been recommended as an adjunct treatment in acute traumatic ischemia and crush injury. Several animal models have shown better outcomes when HBO is used in crush injury and compartment syndrome. Animal and in vitro models have suggested that these beneficial effects may be mediated by attenuation of ischemia-reperfusion injury. We did a systematic review of the literature using the Eastern Association for the Surgery of Trauma (EAST) recommendations for evidence-based reviews. An electronic search using Medline, OVID technologies, and the Cochrane database was performed. Only clinical papers published between 1966 and December 2003 with at least five patients that included enough information to evaluate were selected. A group of trauma experts reviewed the selected articles and scored them applying the instrument developed by the EAST practice management guidelines committee. Nine documents fulfilled the inclusion criteria for a total of approximately 150 patients. Most documents were retrospective, uncontrolled, and case series lacking a standardized methodology (class III). There was one prospective controlled randomized trial with some limitations on its design. We determined that eight of nine studies showed a beneficial effect from HBO with only one major complication. We concluded that adjunctive HBO is not likely to be

harmful and could be beneficial if administered early. Well designed clinical studies are warranted.

PMID: 16022014 [PubMed - indexed for MEDLINE]