Plafki C ; Carl UM ; Glag M ; Hartmann KA
Affiliation: Center for Hyperbaric Medicine, Luebeck.

Title: **The treatment of late radiation effects with hyperbaric oxygenation (HBO).**

Source: *Strahlenther Onkol* (*Strahlentherapie und Onkologie : Organ der Deutschen Rontgengesellschaft ... [et al].*) 1998 Nov; 174 Suppl 3: 66-8
Additional Info: GERMANY

Standard No: **ISSN:** 0179-7158; 1439-099X; **NLM Unique Journal Identifier:** 8603469

Language: English

Abstract: BACKGROUND: Late radiation injuries may impose a negative influence on the quality of life in the affected patients. In several entities, standardized treatment protocols are lacking. Hyperbaric oxygenation (HBO) has been shown to have beneficial effects in the treatment of late radiation sequelae. MATERIAL AND METHODS: The basic principles of HBO are reviewed as well as clinical issues. Current study protocols are presented. RESULTS: During HBO-therapy the patient breathes pure oxygen at pressures above 100 kPa. The oxygen solubility within the fluid phase of the blood is largely increased. Biological effects include an increased oxygen diffusibility, improved collagen synthesis and neoangiogenesis as well as an enhancement of antimicrobial defenses. By decreasing the capillary filtration pressure a reduction of edema becomes possible. HBO has been shown to prevent complications following surgery in irradiated tissues. Its efficacy as an adjunct in the treatment of osteonecroses in radiation patients could be demonstrated. In addition, the loss of osseointegrated implants in the maxillofacial bones of these patients could be significantly reduced. Further indications include soft tissue necroses, hemorrhagic cystitis and proctitis in tumor patients that have been treated by radiotherapy as part of a multimodality approach. CONCLUSIONS: HBO in the treatment of late radiation effects is still subject of investigation, but remarkable results have been reported. Optimized treatment protocols need to be determined in various entities. The rate of side effects is acceptable low.