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Evaluation of Hyperbaric Oxygen Therapy for Chronic Wounds

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Abstract

Background: Treating chronic wounds is challenging. Despite standard wound care, some chronic wounds fail to heal. Therefore, hyperbaric oxygen therapy (HBOT) was developed as an adjunct to standard wound care.

Objective: To evaluate the efficacy of HBOT for treating chronic wounds due to a variety of causes at our institution.

Methods: We reviewed the medical records of patients with chronic wounds treated with HBOT in addition to standard wound care at the Department of Dermatology, Nippon Medical School Hospital, from 2009 through 2012. Twenty-nine patients were reviewed (14 men and 15 women; mean age, 64.1±14.4 years). The cause of chronic wounds was diabetes mellitus (DM) in 13 patients, venous stasis in 10, polyarteritis nodosa cutanea in 2, and livedoid vasculopathy, pyoderma gangrenosum, chronic renal failure, and systemic sclerosis in 1 patient each. The patients underwent HBOT for 60 minutes with 100% oxygen delivered via a mask in a hyperbaric chamber pressurized to 2.8 atmospheres of absolute pressure. The response of the chronic wounds to HBOT was evaluated according to the following criteria: "excellent": more than 90% wound healing; "good": a greater than 30% reduction in wound size, and wound healing was confirmed on follow-up visits within 6 weeks; "fair": wound healing was achieved