OXIGENACIÓN HIPERBÁRICO EN EL TRATAMIENTO DE ULCERAS POR PIE DIABÉTICO – SEGUIMIENTO A LARGO PLAZO

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Hyperbaric oxygen (HBO) therapy in treatment of diabetic foot ulcers Long-term follow-up

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Background: The cause of diabetic foot ulcers is multifactorial, e.g., neuropathy and angiopathy, leading to functional disturbances in the macrocirculation and skin microcirculation. Adequate tissue oxygen tension is an essential factor in infection control and wound healing. Hyperbaric oxygen (HBO) therapy, daily sessions of oxygen breathing at 2.5-bar increased pressure in a hyperbaric chamber, has beneficial actions on wound healing including antimicrobial action, prevention of edema and stimulation of fibroblasts. The aim of the present study was to investigate the long-term effect of HBO in treatment of diabetic foot ulcers.

Methods: Thirty-eight diabetic patients (30 males) with chronic foot ulcers were investigated in a prospective study. The mean age was 60±13 years and the mean diabetes duration 27±14 years. All patients were evaluated with measurements of transcutaneous oxygen tension (tcPO2), peripheral blood pressure, and HbA1c. All patients had a basal tcPO2 value lower than 40 mmHg, which increased to 100 mmHg, or at least three times the basic value, during inhalation of pure oxygen. Seventeen patients underwent 40–60 sessions of HBO therapy, while 21 patients were treated conventionally. The follow-up time was 3 years. Results: 76% of the patients treated with HBO (Group A) had healed with intact skin at a follow-up time of 3 years. The corresponding value for patients treated conventionally (Group B) was 48%. Seven patients (33%) in Group B compared to two patients (12%) in Group A went to amputation. Peripheral blood pressure, HbA1c, diabetes duration, and basal values of tcPO2 were similar in both groups.

Conclusions: Adjunctive HBO therapy can be valuable for treating selected cases of hypoxic diabetic foot ulcers. It seems to accelerate the rate of healing, reduce the need for amputation, and increase the number of wounds that are completely healed on long-term follow-up. Additional studies are needed to further define the role of HBO, as part of a multidisciplinary program, to preserve a functional extremity, and reduce the short- and long-term costs of amputation and disability.