

OXYGEN INFUSION AND VASCULAR LESIONS

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Prof. Vito Melita, Dr. Domenico Amuso, Dr. Stefano Restani

AUTHORS

Prof. Vito Melita: Vascular Surgeon

Dr. Domenico Amuso: Surgeon, Cosmetic Medicine Expert [d.amuso@fastwebnet.it]

Dr. Stefano Restani: Dermatologist, Nutritionist and Homotoxicologist

INTRODUCTION

Our experience bases itself on the objective evaluation of some patients in whom the healing process of vascular trophic lesions in the lower limbs (case report) was difficult. Based on the clinical consideration that the healing of ulcers is impeded by disturbed vascularization, which entails hypoxia from the center of the ulcer (pO₂ 0–10 mm Hg) to the periphery (pO₂ 60 mm Hg); the Hyperbaric therapy is used empirically with success.

Local therapy with Oxygen has proved effective in the regeneration of the endothelium, avoiding the collateral effects of systemic hyperbaric therapy and stimulating an intense self repair. "Topic" (local) Oxygen Infusion performed with Oxy Xtra Med (Maya Beauty Engineering) is an instrument available to all doctors treating ulcers/lesions/wounds which are healing with difficulty. There is an obvious rationale justifying its use, given that it has been clearly demonstrated that an increase in pO₂ levels in ulcer tissues entails an increase in collagen deposition and a decrease in the infection within the ulcers themselves.



METHOD

Patients were treated twice a week. The duration of each treatment of each lesion is never inferior to 8 minutes. All treated lesions healed presenting a complete re-epithelization and resolution of the wound but the timing of each healing process was different

for each patient from a minimum of 2 months to a maximum of 13 months.



RESULTS

In the case of chronic ulcers Oxygen Infusion therapy increases the percentage of successful healing. The treatment of a chronic ulcer must not be suspended prematurely, but must be continued until completely healed. The healing process of a chronic wound can occur during the Oxygen Infusion treatment itself starting with just a few capillaries: this could indicate that their presence triggers the healing process. Neo-vascularization takes place through two processes:

- 1) growth of new blood vessels favored by local angiogenetic factors produced by endothelium cells (angiogenesis);
- 2) recruitment and differentiation of stem cells / progenitor cells (SPC) to create new vessels with a process called vasculogenesis.

Oxygen Infusion Therapy plays a part in both of these processes. Oxygen Infusion is a methodology which can bypass general hyperbaric therapy (not entirely risk free) but exploits topically the same mechanisms tied to the action of Oxygen, known thanks to the use of hyperbaric therapy. Oxygen Infusion uses pressures (ATA between 2 and 3) higher than the environment's normal air (a mixture of gasses) pressure. Oxygen concentration varies between 93 and 96 %.