TREATMENT OF FROSTBITE WITH HYPERBARIC OXYGEN THERAPY (P206)

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Introduction: Frostbite is an uncommon event that can occur from exposure to temperatures below -4 degrees C and can lead to potential serious tissue damage and necrosis. The pathophysiological mechanisms of frostbite have marked similarities to wounds commonly treated with hyperbaric oxygen therapy. The goal of frostbite treatment is to salvage as much tissue as possible and avoid excessive excision. In frostbite, a certain number of cells are injured irreversibly but a large number of cells are injured reversibly, and these may recover and survive with hyperbaric oxygen (HBO₂) treatments. We treated 3 patients with deep frostbite with hyperbaric oxygen therapy.

Methods: Using hyperbaric oxygen (HBO₂), we recently treated three patients (age 46, 58 and 62) that obtained frostbite injuries. First patient suffered frostbite of the second, third, fourth and fifth finger while hiking in north Norway. Both other patients suffered frostbite on their feet while hiking in the Himalayas. Their progress was monitored by regular photographs and EQ-5D VAS scores. All patients were treated with daily sessions of in total 80 minutes of 100% oxygen at 2.5 ATA.

Results: HBO₂ treatment started between 21 and 28 days post frostbite, at first a wait and see policy was initiated while waiting for permission of the insurance company for starting HBO₂ treatment. All patients showed a remarkable preservation of tissue with some lines of demarcation totally diminished and other demarcation lines mowed up more distally than expected. The EQ-5D VAS score increased from 5.5 to 8.4, 6 to 8.8 and 6 to 7, respectively.

No adverse effects of HBO₂ treatment were observed. In all three patients surgical intervention was needed, but with smaller excision of dead tissue, as expected at admission.

Conclusions: Based on our 3 cases HBO₂ treatment is a save therapy with no observed adverse effects.

All patients showed a remarkable preservation of tissue, leading to a less extensive necrotectomy than expected at first examination. It is hoped that higher level of evidence guide future decisions in this area.