

HBOT helps with acute traumatic ischemia

Acute traumatic ischemia is caused by injuries interrupting blood flow to extremities. In this way also the oxygen supply is interrupted, which slows or even stops wound healing.

Acute traumatic ischemia is the result of an injury interrupting blood flow to extremities. Examples of such injuries are open fractures, which rupture arteries, crush injuries and skeletal muscle compartment syndrome, in which there is an interruption in the micro-circulation. With severe crush injuries complications (infections, non-healing of fractures, amputations) may arise in as many as 50% of cases.

Vicious circle

As written on Advanced Hyperbaric Recovery website: “Release of pressure that occluded circulation continues the sequence of edema, anoxia and tissue destruction. Post traumatic edema further reduces oxygen supply to tissues by increasing the oxygen distance must travel to diffuse to and from cells, and by directly impairing microcirculation. The resulting decrease in tissue oxygen tension impairs wound healing by interfering with ability of neutrophils to fight bacteria, new cell growth, collagen disposition.”

When oxygen tension in tissues falls below 33 mmHg, this increases the risk of infection and slows healing. Without oxygen, white blood cells cannot kill microbes. Collagen also depends on oxygen for new cell and vessel growth.

HBOT’s role as adjunctive therapy

“Hyperbaric Oxygen Therapy at 2 ATA increases blood oxygen content by 25%, but increases plasma and tissue oxygen tension 10-fold. The net effect is a threefold increase in oxygen diffusion through tissue fluids. Increased oxygen reduces edema through vasoconstriction, which further promotes oxygenation. Increased oxygen tensions in hypoxic tissues allow healing and help prevent spread of infection and damage to adjacent, non-involved tissue, decreasing complication rates and cost of management.”

As written in an abstract on the Springer Link website: “Adjuvant hyperbaric oxygen therapy (HBOT) should be administered as soon as possible; when it is given early it can prevent large expanses of ischemic necrosis, minimize the frequency and extent of amputations, reduce oedema, control infection, support healing, and prevent reperfusion injury. However, an early start of HBOT and an uncompromising application without restrictions to established surgical treatment and intensive care therapy is essential.”

Charles’ story

Charles endured a crush injury to his toe while working, made worse by a tourniquet that went wrong. “During Hyperbaric Oxygen therapy my toe went from black and dead looking to pink and then finally to growing new skin back over my toe. I could start feeling my toes again; even after my doctor said I wouldn’t feel my toe again for two years! Amazing!,” he revealed for the Advanced Hyperbaric Recovery website, where you can also read his full testimonial.

AHA Hyperbarics does not provide medical advice, diagnose health conditions or prescribe treatment. The contents of the AHA Hyperbarics site, such as text, graphics, photographs and other materials on the AHA Hyperbarics site are only for informational purposes.

[Read more](#)

References:

Kemmer, Armin. [Crush Injury and Other Acute Traumatic Ischemia](#). Handbook on Hyperbaric Medicine. 2006; 305-327.

[Crush injury, compartment syndrome and other acute traumatic ischemias](#). Published online on Advanced Hyperbaric Reco₂very.