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Effects of hyperbaric oxygen on GDNF expression and apoptosis in spinal cord injury.

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Abstract

The effects of hyperbaric oxygen treatment on the progress of secondary damage following traumatic spinal cord injury were investigated. The early onset of hyperbaric oxygen treatment significantly diminished the number of apoptotic cells 1 day after the injury. However, hyperbaric oxygen did not influence the proliferation of macrophages or activated microglia. The gene expression of glial cell line-derived neurotrophic factor (GDNF) and inducible nitric oxide synthetase (iNOS) was significantly attenuated 1 day after the injury in the hyperbaric oxygen groups compared with the control group. The down-regulation was confirmed by immunohistochemical staining. Early hyperbaric oxygen treatment was shown to effectively suppress the progress of apoptosis perhaps via the inhibition of iNOS gene despite the down-regulation of the GDNF gene.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/15640758>