

# Does hyperbaric oxygen therapy facilitate peripheral nerve recovery in upper extremity injuries? A prospective study of 74 patients

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## Abstract

**Purpose:** Several experimental studies have investigated the effects of hyperbaric oxygen therapy (HBOT) on peripheral nerve regeneration. However, to the best of our knowledge, clinical studies to evaluate the effects of HBOT on peripheral nerve recovery are seldom performed. The aim of our study was to investigate the efficacy of HBOT following primary nerve repair in patients with upper extremity nerve injuries.

**Methods:** Patients admitted to our hospital between 2015 and 2019 with ulnar and median nerve injuries were included in the study. Patients were randomized based on their application dates and divided into two different groups. Patients who received HBOT following standard epineural nerve repair were included in group 1, while patients who only underwent epineural nerve repair were included in group 2. All patients were followed up at 3, 6, and 12 months post-treatment and evaluated through electroneuromyography analysis of the traumatized nerve, injured nerve-related muscle strength, and two-point discrimination test.

**Results:** Impulse transmission of injured nerves to the end organ was faster in group 1. Further, ENMG parameters demonstrated that injured nerves of patients in group 1 recovered faster. Patients in group 1 also reached higher power score and had significantly more rapid motor recovery than patients in group 2.

**Conclusion:** This prospective study of upper extremity injuries demonstrated the favorable effects of HBOT on nerve recovery both clinically and electrophysiologically following nerve repair. One HBOT session each day for 5 days after surgical treatment can decrease morbidity and facilitate recovery.