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Our experience of hyperbaric oxygenation therapy usage in treatment of spinal cord injury

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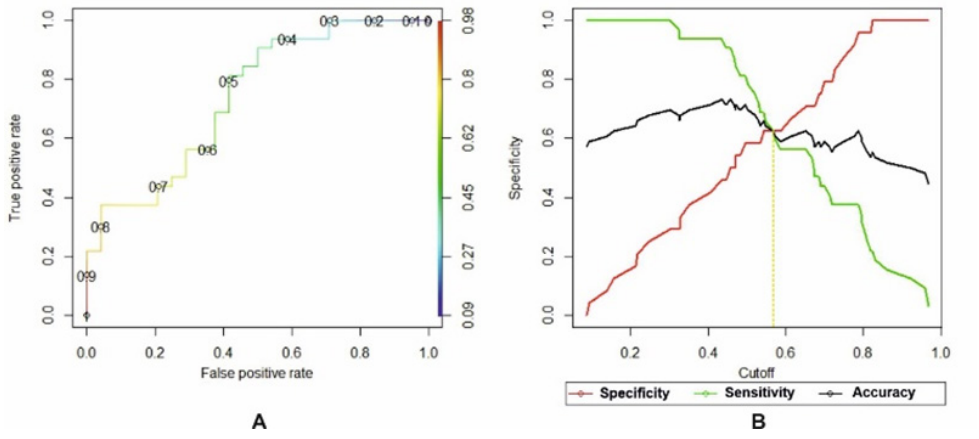
One of the promising directions in the treatment and rehabilitation of patients with spinal cord traumatic injury is the use of hyperbaric oxygenation (HBO). Experimental models have shown that HBO has a neuroprotective effect in spinal cord injury, but the results of clinical application of the method are still contradictory.

Objective: to determine the effectiveness of HBO in the complex therapy of victims with traumatic spinal cord injury and the feasibility of further study of this area.

Materials and Methods: Study design - pilot observational retrospective case - control. When selecting a control for each clinical case, the following factors were considered: gender, age, circumstances of injury, type of damage to the osteoligamentous apparatus, level of neurological deficit, degree of damage and compression of the spinal cord, time elapsed from the moment of injury to surgery. We analyzed 28 "case – control" pairs. The main criterion for the effectiveness of therapy was the change in the functional class according to the ASIA scale.

Results: Positive dynamics was registered in 57% of victims, including in the group of patients receiving HBO therapy - in 71%, in the control group - in 43%. HBO therapy in the postoperative period significantly affects the dynamics of regression of neurological disorders (p = 0.0295). Odds ratio - 3.333 (95% confidence interval - 1.098–10.116, p = 0.0335). The calculation of the odds ratio, adjusted for additional analyzed factors, showed a more pronounced efficiency - 4.519 (95% confidence interval - 1.279–15.962, p = 0.0192).

Conclusions: The obtained results indicate that usage of HBO as a method of complex therapy for traumatic spinal cord injury is promising for further study in order to determine the effectiveness of the method, the optimal timing of treatment initi ation in the postoperative period and its duration.



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Biography

Oleksii S Nekhlopochyn specialized in Neurosurgery and Traumatology. He is a researcher at the Clinic of Spinal Neurosurgery of Romodanov Neurosurgery Institute of National Academy of Medical Sciences of Ukraine. The main direction of scientific activity is the development and optimization of methods of therapy for patients with traumatic spine and spinal cord injuries.

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