Spinal Injury Directory

Effect of Hyperbaric Oxygen Therapy on fetal spinal grafts: an experimental study.

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In neural transplantation, lack of oxygen supply to the graft in acute stage is an important problem. This study was undertaken to evaluate the effects of hyperbaric oxygen (HBO2) on fetal spinal grafts.

Spinal cord tissues obtained from 16-day fetal rats were transplanted into the spinal cord of adult Wistar rats (n = 30). After transplantation, they were randomly divided into two groups (n = 15 for each group); Group 1 received transplant alone, group 2 received transplant and HBO2 therapy consisting of 100% oxygen at 2.5 atm abs for 90 min twice a day for 7 days. Seven days after their surgery, all animals were killed for histologic examination. Degenerative changes, parenchymal integrity, host spinal cord edema, and vascularization of the graft were scored on a 3-point scale. Scores of these parameters were statistically analyzed. The graft survival rates in groups 1 and 2 were 54.5% and 71.4%, respectively.

Animals treated with HBO2 showed statistically less spinal cord edema than the untreated groups (P < 0.05). Parenchymal integrity was also significantly better in this group (P < 0.05).

The results indicate that edema reduction effect of HBO2 prevents the displacement of graft from the gap and contributes to the integration between the graft and host.

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