



Title: Effect of transplantation of olfactory ensheathing cells combined with hydrogen gas inhalation on the recovery of motor function in rats with spinal cord injury

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Abstract:

Objective: To investigate the effect of transplantation of olfactory ensheathing cells (OECs) combined with hydrogen inhalation on the recovery of motor function in rats with spinal cord injury (SCI). **Methods:** Forty-eight healthy SD male rats aged 16 weeks and weighing 200 ± 20 g were randomly divided into groups Group 4: 12 in the OECs transplantation group, 12 in the hydrogen inhalation group, 12 in the OECs transplantation + hydrogen inhalation group, 12 in the blank control group, the rat T10 spinal cord injury model was established, and the BBB score was used to observe the limb movement of the rat after the spinal cord injury After functional recovery, three weeks later, the injured local spinal cord tissue was taken, and Nissl Staining was used to observe the shape and number of Nissl body. **Results:** One week later, there was no significant change in the BBB scores of the four groups ($P > 0.05$); two weeks later, the BBB scores of the OECs transplantation group, hydrogen inhalation group, OECs transplantation + hydrogen inhalation group were the same as those of the previous week and blank Compared with the control group, there was an increase ($P < 0.05$), and there was no difference between the three groups ($P > 0.05$); Three weeks later, the BBB score of the OECs transplantation + hydrogen inhalation group was improved compared with that of the other three groups a week ago ($P < 0.05$), and the morphology of Nissl body was more complete than the other three groups, and the number was significantly higher than that of the other three groups. **Conclusion:** OECs transplantation combined with hydrogen inhalation in spinal cord injury rats can promote the differentiation and proliferation of neurons, thereby promoting the recovery of rats' motor function.