Neural Stem Cells in Motor Neuron Diseases

Abstract

Objective: This study aimed to investigate the potential of neural stem cells (NSCs) for the treatment of motor neuron diseases (MNDs), which are a group of progressive neurological disorders characterized by the degeneration of motor neurons.

Methods: The study was conducted using a human NSC line derived from a patient with amyotrophic lateral sclerosis (ALS), along with non-diseased control NSCs. The effects of ALS-secreted factors on the survival and differentiation of the NSCs were assessed in vitro and in a mouse model of ALS.

Results: In vitro, the ALS-secreted factors significantly reduced the survival of the NSCs, while in the mouse model, the transplantation of the NSCs improved motor function and extended survival compared to the control groups.

Conclusion: These findings suggest that NSCs have therapeutic potential for the treatment of MNDs, particularly ALS, by promoting motor neuron survival and function.

Keywords: Motor neuron diseases, neural stem cells, amyotrophic lateral sclerosis, disease models.
death in an experiment using human-derived cells is an important step forward. Motor neuron diseases
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