

Natureza do trabalho: Resumo

TÍTULO

THERAPY WITH MESENCHYMAL STEM CELLS IN AMYOTROPHIC LATERAL SCLEROSIS

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RESUMO

Introduction: Amyotrophic lateral sclerosis (ALS), or Lou Gehrig's disease, is a motor neuron disease (MND) which involves the degeneration of upper and lower motor neurons. It results in muscle paralysis and death on average 3-5 years after the onset of symptoms. In the USA, the global prevalence rate is 3,9 / 100.000 people and it grows as the age increases. Effective therapies to slow the disease progression aren't available yet due to the difficulty in defining its etiology⁴. However, therapy with mesenchymal stem cells (MSCs) represents a hope for the treatment of ALS. **Review:** MSCs are in vogue when referring to cell therapy in ALS, due to their therapeutic plasticity beyond the facility of isolation from adult tissues such as bone marrow and adipose ones. It is expected the MSCs to replace the degenerated motor neurons (MNs) with new ones and also support glial cells⁵. In several studies there has been demonstrated the feasibility of intraparenchymal transplantation of bone marrow-derived MSCs. At the University of Murcia, Spain, a clinical trial analysed 11 ALS patients that were transplanted with autologous bone marrow mononuclear cells into the thoracic spinal cord (T3-T4). Two years later, it was shown the presence of a greater number of MNs in the treated segments of the spinal cord, beyond the evidence of neurotrophism. In another clinical trial in Turkey, 13 sporadic ALS patients were transplanted with bone marrow-hematopoietic progenitor stem cells, this time, into the cervical spinal cord (C1-C2). After one year, nine patients showed improvement confirmed by electroneuromyography. **Conclusion:** Based on the clinical trials analysed, it can be concluded that the MSCs therapy appears to have some efficacy. However, new clinical trials, led to long-term and with more rigorous analysis, are needed to ensure the feasibility of cell therapy in the treatment of ALS.