Intrathecal and intramuscular application of mesenchymal stem cells and their secretome in the treatment of amyotrophic lateral sclerosis

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Country

Czech Republic

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Intrathecal and intramuscular application of mesenchymal stem cells and their secretome in the treatment of amyotrophic lateral sclerosis

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3

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Research Abstract

Amyotrophic lateral sclerosis (ALS) is a progressive neurodegenerative disease with no effective therapy. Our project will compare the effect of repeated intrathecal application of human mesechymal stromal cells (MSCs) and MSCs-conditioned medium (CM) on the course

of symptomatic SOD1G93A rat models of ALS. Animals will be tested behaviorally. Treatment yeilding better results will be combined with MSC intramuscular application into hindlimb muscles to prevent dying-back axonal degeneration. MSCs lysate and CM, cerebrospinal fluid and blood serum from animals and ALS patients will be analyzed and compared for the content of cytokines and growth factors. Changes in metabolites will be monitored during the animals' life span by MR Spectroscopy. The results of the study should: a) compare the properties of MSCs and CM; b) disclose the effect of repeated applications of MSCs/CM on the outcome of ALS and its combination with intramuscular application; c) assist toward the clinical application of MSCs/CM.

Further information available at:

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Investments < €500k

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Czech Republic

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