Neuro-regenerative effect of autologous mesenchymal stem cell therapy in cerebral palsy patients: Clinical trial

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Background: Stem cell-based therapies provide hope for various CNS diseases including perinatal hypoxic ischemic insults of the brain. Stem cells have the capacity to proliferate in culture, migrate and disseminate following implantation within the adult CNS. The neuroregenerative potential of bone marrow-derived mesenchymal stem cells (MSCs) is proposed to be through paracrine effect, stimulation of endogenous stem cells, angiogenesis, in addition to the disputed possibility of direct trans differentiation.

Objectives: To study the impact of MSC transplantation on psychomotor functions in patients with cerebral palsy.

Methods: Fifty two Egyptian patients with cerebral palsy were divided into: group I (26 patients who underwent autologous intrathecal bone marrow-derived mesenchymal stem cell injection) and group II (26 patients who served as control). Both groups were assessed, initially and after one year, by a group of clinical scales to assess motor, communication and independence skills.

Results: In group I, using Boyd's developmental progress scale revealed a statistically highly significant improvement in motor, independence and communication skills after SCT (P value<0.01). Also, 100 points scale revealed a statistically significant improvement after SCT (P value<0.05).

Conclusion: Autologous stem cell transplantation could be a useful tool for the management of patients with cerebral palsy as it may help in improvement of motor, independence and communication skills.

Biography

Wael Abo El-Kheir is currently works as Professor of immunology & Microbiology in military medical academy and he is the member of

the national committee for stem cells Egyptian ministry of health and also honor as secretary of the Egyptian society of stem cells.

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