

Autologous BM- derived MSC therapy in cerebral palsy: A pilot study

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Introduction: Cerebral palsy (CP) is a disorder caused by injury or abnormal development of the brain at or immediately after birth. Current management of CP may improve the symptoms, such as muscle tone and gait, but is not directed to the original damage. Cellular therapy is evolving as a regenerative tool in many diseases with neural damage. Mesenchymal stem cells (MSCs) have been proven to transdifferentiate into neural lineage and improve neurodegeneration in animal models and in few clinical trials.

Methods: this study is a randomized controlled trial enrolling 100 CP patients aged 1-7 years. Patients were assigned into two groups: Study group (44 patients after drop out cases) and control group (50 patients). All patients were subjected to history taking and clinical assessment. The study groups underwent bone marrow aspiration and MSC separation. MSCs were injected intrathecally. Follow-up was done using Child Health Questionnaire, Gross Motor Function classification System and Pediatric evaluation of disability inventory.

Results: Overall assessment revealed improvement in motor, cognitive, or social parameters in 8 patients (18.18%). Study group showed improvement in Child Health Questionnaire, Gross Motor Function Classification, but not Pediatric Evaluation of Disability Inventory. No correlation was found between improvement and age and gender. Complications observed were transient related to injection, no neurological or radiological complications were observed.

Conclusion: Autologous MSC injection in CP patients showed short-term safety, with variable efficacy in improving motor and cognitive defects.

Biography

Hala Gabr has completed her Ph.D at the age of 29 years from Cairo University and postdoctoral studies from Cairo University School of Medicine. She is the director of the bone marrow transplantation laboratory, Pediatric University Hospital, Cairo University. She is the director of the Egyptian program for clinical application of stem cell therapy in end stage liver cell failure. She has published papers in stem cell therapy in various disciplines.

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