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Neuron point of care stem cell therapy: Intrathecal transplant of autologous bone marrow-derived stem cells in patients with cerebral palsy. Preliminary results

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Background: Cerebral palsy (CP) encompasses the largest group of childhood movement disorders, the patterns and severity varies widely. Today, the management focuses only on a rehabilitation therapy that tries to secure the functions remained and prevents complications. However the treatments are not aimed to cure the disease. Stem cells (SCs) transplant via intrathecal is a new approach to the disease.

Method: Our aim was to performed a pilot study under the condition of unproven treatment on clinical practice to assessed the safety and efficacy of Neuron Point-of-care Stem cell Therapy (N-POCST), an ambulatory procedure of autologous bone marrow derived SCs (BM-SCs) harvested from the posterior superior iliac crest undergo an on-site cell separation for intrathecal infusion via lumbar puncture.

Results: 82 patients were treated in a period of 28 months, with a follow-up after 6 months. They had a mean age of 6.2 years old and male predominance (65.9%). Our preliminary results show that: 1. No patient had any major side effects, 2. Only 20% presented mild headache due to LP, 3.53% of the patients had an improvement in spasticity, 4. 61% improved the coordination abilities, 23% improved the motor function, 15% improved the speech, 23% reduced the number of convulsive events with the same doses or less doses of anti-convulsive medication and 94% of the patients report a subjective general improvement.

Conclusions: These results support previous worldwide publications that described the safety and effectiveness of autologous BM-SCs transplant for patients with CP.

Biography

Francisco Ruiz-Navarro is a Research Associate in the Austrian Society of Regenerative Medicine. Before, he was working as researcher at the Mexican Institute for Neurology and Neurosurgery in the Cerebrovascular Department focused in multi-centric population studies with Hispanic stroke patients. He was Research Assistant in the Center for Research and Advanced Studies of the National Polytechnic institute (CINVESTAV) in Mexico City at the Brain Bank and Physiology, Biology and Neuroscience Department. He was Research Assistant in La Raza Medical Center in Mexico City in the pediatric nephrology department. He obtained the Medical Degree in Anahuac University in Mexico City and became USMLE board certified in United States of America with outstanding grades. During his carrier he had been attending physician in different Mexican hospitals in Mexico City as part of general medicine, anesthesiology and neurosurgical teams. He performed clinical rotations at Jackson's memorial Hospital Miami, USA in the stroke unit, neuroradiology department and neurosurgery department. His current research is directed to the use of autologous bone marrow-derived stem cells for neurological diseases.

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