

## **Neuron Point-of-Care Stem Cell Therapy: Intrathecal Transplant of Autologous Bone Marrow-Derived Stem Cells in Patients with Cerebral Palsy**

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**Abstract :** 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: A. No patient had any major side effects, B. Only 20% presented mild headache due to LP, C. 53% of the patients had an improvement in spasticity, D. 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.

**Keywords :** autologous transplant, cerebral palsy, point of care, childhood movement disorders

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