

5th World Congress on **Cell & Stem Cell Research**

March 23-25, 2015 DoubleTree by Hilton Chicago - North Shore, USA

Neuron point-of-care stem cell therapy (N-POCST): Transplantation of autologous bone marrow derived stemcells for traumatic central nervous system disorders, the future of a new method

Francisco Ruiz-Navarro¹, Funovic M.², Matzner M.² and Kobinia G.¹

¹ASRM – Austrian Society of Regenerative Medicine, Austria

²Medical University of Vienna, Austria

Traumatic insults of the central nervous system (CNS) result in definite chronic disability that respond partially and only in certain cases to rehabilitation. The use of autologous bone marrow-derived stem cells (BMSC) has been suggested to be a feasible treatment that improves the neurological recovery in these disorders. In the acute phase the stem cells transplanted target is to prevent neurons death by different secreting factors that provide neuroprotection via improvement of the local microenvironment. In a chronic scenario the objective is the restoration of neural tissue by transdifferentiation. Although the acute and chronic treatment seemed to have positive results in preclinical and ongoing pilot studies, the rationale of neuroprotection makes more probably to achieve better outcomes with an acute intervention. In order to accomplish the intervention immediately after the neurologic insult a method to process bone BMSC in an effective and prompt way should be available. The Neuron point-of-care method (N-POCST) described before by our group for other neurological diseases like amyotrophic lateral sclerosis, is a method of on-site cell separation with a closed system that uses density centrifugation technique with a fixed 10% reduction rate to isolate bone marrow-derived mononuclear cells (BM-MNCs) immediately after bone marrow aspiration and without mayor cell modification. The BM-MNCs concentrate is infused intrathecal (IT) after the separation. Several publications had described the safety of intrathecal stem cells infusion, others described the positive results with autologous BMSC, other studies confirm the effectiveness of the cell separation process to concentrate BM-MNCs, all of these results together open the track to develop further randomized controlled clinical trials with N-POCST in patients with acute traumatic brain injuries.

Biography

Francisco Ruiz-Navarro (M.D) is Research Associate at Regmed Research Center in Vienna, Austria. 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.

research@sct-vienna.com

Notes: