

## **Clinical application of autologous mesenchymal stem cells in amyotrophic lateral sclerosis: Yes or no? The Greek experience**

**K. Karageorgiou<sup>1</sup>**, K. Karageorgiou<sup>1</sup>, A. Stavropoulou<sup>2</sup>, E. Michalopoulos<sup>2</sup>

<sup>1</sup>*Neurological, Athens Medical Center, Greece*

<sup>2</sup>*Hellenic Cord Blood Bank, Biomedical Research Foundation Of The Academy Of Athens, Greece*

Objective: The evaluation of safety and clinical effectiveness of the transplantation of autologous mesenchymal stem cells (MSCs) in greek patients with amyotrophic lateral sclerosis (ALS) and discussion of the results according to the scientific references. Methods: Forty patients (Group A) with definite ALS were enrolled in the study. Bone marrow was collected from the posterior iliac crest and MSCs were expanded at the laboratory of the Hellenic Cord Blood Bank (HCBB) of the Biomedical Research Foundation of the Academy of Athens (BRFAA). The cells suspended in 2 ml of autologous CSF were transplanted intrathecally. A second group of patients with ALS (Group B) without transplantation was also enrolled in the study. The clinical progress of the disease was evaluated by the ALSFRS-R scale. An evaluation of the clinical profile of the two groups with the ALSFRS-R before and after the transplantation has been done for a long period with a follow up of 4 years. Results: A significant slowing down of the decline of the disease after transplantation has been ascertained during these 4 years. Conclusion: Our results demonstrate that the injection of MSCs intrathecally to ALS patients is safe well tolerated and without adverse events.