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Developing clinical guidelines to treat neurological and neurosurgical disorders with stem cells

Francisco Ruiz-Navarro and **Georg Kobinia**
Austrian Society for Regenerative Medicine, Austria

After reviewing several current clinical guidelines, we found that less than 1% of all the recommendations for neurological diseases in the clinical guidelines are sustained by a level 1A of evidence (Systematic review of RCT with homogeneity, according to the Oxford Centre of Evidence). When reviewing the scientific evidence of stem cells treatment, we found that several stem cell therapies are based on the same or even stronger scientific evidence than the current medical treatment. This means accepted treatments and stem cell treatments nearly have the same level of evidence. Although both are far from level A, it is apparently enough for several clinicians and regulatory agencies to maintain a reluctant posture towards stem cell therapies but not towards other kinds of treatment. We propose that not just level 1A of evidence should be accepted as treatment, especially in cases where there are no options for patients besides experimental treatments. In this debate, the necessity of RCT or blinded trials arises, especially because SCs therapies are a procedure rather than medication and conducting clinical studies with "surgical placebos" is ethically controversial. There are analyses that describe how series of observational studies found results similar to those obtained from RCTs, which means that certain number of cohort or case-control studies would yield enough valuable information to bring treatments to the clinical practice, although we plan to wait for better-design RCT to confirm the results, if possible. We reviewed the most relevant literature concerning the use of stem cells to treat several neurological disorders. This literature review will provide key information on how stem cell's interventions were performed with the analysis of the level of evidence they are providing. Drawing on the gathered information we then compared the scientific evidence that underlies the current treatment guidelines with the scientific evidence on currently available stem cells publications. As a result of this survey and analysis we conclude with a series of recommendations for the use of stem cells in clinical settings.

Biography

Francisco Ruiz-Navarro is a Research Associate and R&D Director of the Austrian Society for Regenerative Medicine in Vienna, Austria where he focuses his research in stem cell therapies for neurological disorders. Before, he was performing research in the Cerebrovascular Department at the National Institute for Neurology and Neurosurgery in Mexico City with special interest in multicentric population studies with Hispanic stroke patients. He was a Research Assistant in the Brain Bank, Center for Research and Physiology, Department of Biology and Neuroscience at the Institute of Advanced Studies at National Polytechnic Institute in Mexico City. He obtained his Medical degree in the Anahuac University in Mexico City, became USMLE board certified in the United States of America and he got his Doctor of Medicine from the Medical University of Vienna.

ruiznavarro.md@gmail.com

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