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Role and clinical results of Stem Cell therapy in the management of stroke

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Cellular therapy is being widely explored in the management of stroke and has demonstrated great potential. It has shown to help the repair of the central nervous system by promoting angiogenesis, neurogenesis, and reduction of glial scar formation. In this study, we have analyzed the effect of intrathecal administration of autologous bone marrow mononuclear cells (BMMNCs) on 24 patients diagnosed with chronic stroke. These patients were also advised a personalized multidisciplinary neurorehabilitation program. These patients were followed up for minimum of 6 months to maximum of 4.5 years. They were assessed on functional independence measure (FIM) objectively, along with assessment of standing and walking balance, ambulation, and hand functions. On comparison of the PET CT scans performed before and after the therapy, Increased FDG uptake was recorded in 3 patients. Out of 24 patients, 12 improved in ambulation, 10 in hand functions, 6 in standing balance, and 9 in walking balance. It was found that, patients of the younger groups showed higher percentage of improvement in all the areas. Also, patients who underwent cell therapy within 2 years after the stroke showed better changes as compared to the other group. We also found that ischemic type of stroke had better recovery than the hemorrhagic stroke. There were no major adverse events recorded on follow up. This study demonstrates the potential of intrathecal autologous cell therapy in improving the prognosis of functional recovery in chronic stroke.

Biography

Alok Sharma is a Neurosurgeon and presently Professor & Head of Department of Neurosurgery at the LTMG Hospital & LTM Medical College, Director of the NeuroGen Brain & Spine Institute and Consultant Neurosurgeon at the Fortis Hospital in Mumbai, India. He has authored 12 books, edited 2 books, contributed chapters to 8 other books and has 83 scientific publications in medical journals. He has made 146 scientific presentations all over the world & has conducted several national and international trials and has been conferred with numerous honors and awards in his distinguished career. He has organized many international and national conferences and regularly conducts hands-on training workshops on Microvascular Surgery, Neuroendoscopy and Spinal fixations. He has been committed to both basic as well as clinical research in attempting to find an answer to the problems of paralysis and neurological deficits that occur following injury and diseases of the nervous system. Is the pioneer of Stem cell therapy in India and has setup the Stem cell and Genetic research laboratory at the LTMG hospital & LTM Medical College. He has also created the NeuroGen Brain and Spine institute which is India's first dedicated Stem Cell Therapy and Neurorehabilitation Hospital. He has published pathbreaking results of Stem Cell therapy in Pediatric Neurodevelopmental disorders such as Autism and Cerebral palsy as well as in other conditions such as Muscular dystrophy and Spinal cord injury. He is the founder of the "Indian Journal of Stem Cell Therapy" and on the editorial board of 4 other journals. He is the Founding President of the "Stem Cell Society of India" and the Vice President of the "International Association of Neurorestoratology". His other special interests include Revascularization surgery for cerebral ischemia, Psychosurgery, Stereotactic surgery, Neuroendoscopy, Spinal surgery and Neurotrauma.

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