

Mesenchymal stem cells might be the answer to Spinal Cord Injury

Newer techniques of delivering stem cells like intra-arterial or intraspinal injections, which can improve the outcome of stem cell therapy, are being explored.

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In India, 20,000 new cases of spinal cord injury are added to the list every year, as compared to 11,000 in US and 700 in UK. Stempeutics Research has done a pilot study on the application of Mesenchymal stem cells in spinal cord injury. Patients with fresh injuries have responded well to this therapy. Although many cell types contribute to organ repair in spinal cord injury, bone marrow mesenchymal stem cells have the greatest potential for repairing the spinal cord injury. Stempeutics is collaborating with Manipal Hospital for pilot studies.

Dr. Sujay Rao, Consultant Neurosurgeon, St Philomena's Hospital, Bangalore, says that delivery of the cells closer to the site of injury is important for obtaining maximum efficacy. Stempeutics in association with various hospitals is applying newer techniques to deliver stem cells closer at the site of injury either through intra-arterial or intra spinal (site of injury) route. This new technique of delivery of stem cells at closer to the site of injury shall improve clinical outcome.

The leading causes of spinal cord injury are vehicle accidents - 41%, violence-22%, falls - 21% and sports- 8%. Severe trauma to the spinal cord causes permanent loss of movement (paralysis), loss of bladder and bowel control and sensation below the site of the injury. Paralysis can involve all four extremities, a condition called quadriplegia or tetraplegia, or only the lower body, resulting in paraplegia. Currently, administration of methyl prednisolone at high doses within 6 hours after injury is the most effective therapy with recognized benefits; however its clinical benefit is relatively minimal. Thus a new treatment for spinal cord injury that enables major recovery of body functions could be a significant advancement in modern medicine.

Different methods have been used to repair damaged spinal cord after injury. Of these most important is bio-interventional therapy, which mainly involves stem cells derived from bone marrow. Bone marrow contains multipotent adult stem cells, which have a great capacity of differentiating to oligodendrocytes. More study is required to establish the initial advantages observed during the pilot study.

Vijay (name changed), a quadriplegic patient received mesenchymal stem cells and showed improvement in his upper limb functions, bladder function and is able to stand up with support. He is now able to do routine activities using his upper limbs and intends to walk soon.

Mrs. Pushpa (name changed), from Gujarat, who suffered a spinal cord injury after falling from height 2 years back, had no bladder and bowel control or movement of her legs. Doctors injected mesenchymal stem cells into her spinal cord at the site of injury. She is now able to walk with support and has bladder and bowel control and credits stem cells for her improvement.

Harsha (name changed) from Bangalore a paraplegic patient has undergone stem cell transplantation through a CT guided delivery technique at the site of injury and the initial response seems encouraging and the follow up results are awaited.

For more details pl visit www.stempeutics.com or pl email to info@stempeutics.com

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Stempeutics Research Private Limited (SRPL) is a leading stem cell company in India, focusing on Research, Therapeutics and Therapy in the field of regenerative medicine. To develop therapies to treat various diseases, Stempeutics undertakes research to acquire knowledge & understanding of stem cells and their differentiation process. Stempeutics is committed to help patients by delivering safe, effective and affordable stem cell therapies.

Stempeutics strength lies in a first rate clinical environment for both research and therapy, knowledge and understanding of translating stem cell therapies into clinical practices. Stempeutics long standing research into the properties and potential of adult mesenchymal stem cells and recent advances in human embryonic stem cells, limbal stem cells and dental stem cells gives Stempeutics the advantage of utilizing these stem cell types in a clinical setting.

Located at Manipal hospital Bangalore, Stempeutics leverages group's healthcare infrastructure and accessibility to trained physicians and surgeons in developing a delivery mechanism for stem cell therapies. It has created a start of the art Stem Cell lab which is cGMP compliant. This lab has been audited by Indian Council of Medical Research (ICMR) and has been approved for Stem Cell research - the only of it's kind in the country.

Keeping in mind the global burden of disease and disorders, Stempeutics has made a strategic move to operate out of its facilities in Manipal and Malaysia. Stempeutics is the first international company to be awarded with BioNexus status in Malaysia by Malaysian BioTechnology Corporation.

Research at Stempeutics operations are within four major categories: (a) Adult mesenchymal stem cells derived from a variety of sources (b) In vitro differentiation of Adult bone marrow stem cells in to various cell types (c) Establishing different Embryonic stem cell lines and (d) Stem Cells isolation and up scaling process

Key therapeutic areas are cardio-vascular, central nervous system, orthopedics, dermatology, pediatrics, endocrinology, gastroenterology, oncology and immunology. The on -going stem cell research focus also provides immense scope to generate future medical solutions for various medical conditions - this only confirms to Stempeutics commitment to deliver 'Bench to Bedside' therapies to Regenerate Hope to millions of patients.

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You can also visit www.stempeutics.com for more information.