Title: Mesenchymal Stem Cells form Umbilical Cord for the Treatment of Central Post Stroke Pain Syndrome

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This is a 62 year old male with history of lumbar and cervical pain, with a laminectomy in 2014. The patient also has a history of hypertension and diabetes mellitus. He had 3 years ago a stroke with right side weakness which improved over time with physical therapy. A year ago during evaluation he had cramps and pain in the upper and lower extremities. He also had poor sleep hygiene, difficulties writing and typing. He was diagnosed with Central Post Stroke Pain Syndrome as a sequela of his stroke.

The pain symptoms have been refractory to multiple medications and was limiting his Activities of Daily Living for the past 3 years.

Mesenchymal Stem Cells from Umbilical Cord (MSC UC) were used to treat his pain.

Mesenchymal Stem Cells are multipotent cells that can differentiate in different types of tissue. They can both self-renew and differentiate into mature tissues such as heart, lung, liver, bone, nerve, muscle and cartilage, among others.

They have the ability to migrate and target specific tissues, this is call homing. They also have a paracrine effect, releasing growth factors and proteins to communicate using exosomes and cytokines.

An Intrathecal injection at C1-C2 was done with 5 Million MSC UC was done with also a 30 Million MSC UC in an Intravenous infusion. The patient was follow up for a year after the injection. He had complete resolution of his cervical and lumbar pain 2 months after the injection and 6 months after the procedure 80% of his Central Post Stroke Pain resolved. A year later the patient continues with the benefits of the MSC UC and his insulin requirements have decreased by a 60%.

Title: Regenerative Medicine and the use of Mesenchymal Stem Cells



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In Regenerative Medicine there is a process of replacing or regenerating human cells, tissues or organs to restore or re-establish structure and normal function . Regenerative medicine also includes the possibility of growing tissues and organs in the laboratory and implanting them when the body cannot heal itself.

Mesenchymal Stem Cells are multi-potent cells that can differentiate in different types of tissue. They can both self-renew and differentiate into mature tissues such as heart, lung, liver, bone, nerve, muscle and cartilage, among others.
There are Autologous and Allogenic Mesenchymal Stem Cells. There are difference and similarities between adult and allogenic Mesenchymal Stem Cells.
There are different allogenic cells or tissues used to treat medical conditions, they are derived from the umbilical cord, the Wharton's Jelly, amniotic fluid or amnion. There are high quality standards for the donation of these cells, donors have to be pre-screened before donating the tissue and samples have to be saved.
Both Mesenchymal Stem Cells have the ability to migrate and target specific tissues, this is call homing. They also have a paracrine effect, releasing growth factors and proteins to communicate using exosomes and cytokines.
Mesenchymal Stem Cells can be used and delivered in multiple ways and it can be use to treat different medical conditions, mostly using cytokines and inhibiting the pro-inflammatory state in tissues.
Stem Cells can be used to treat multiple medical conditions, since there is the possibility of cell repair and tissue regeneration.