How Effective Is Multiple Sclerosis Treatment With Stem Cells?

Multiple sclerosis is an inflammatory, neurodegenerative, autoimmune disease characterized by myelin damage, nerve fiber damage, and CNS neuron loss. It’s unknown what leads to the onset of this condition; however, the symptoms of MS are lifelong, and potential symptoms may vary from person to person.

Most traditional treatment options aim to slow the disease progression and treat symptoms, but fortunately, cell-based therapies have been found to treat the underlying issues involving MS. The stem cell treatment for MS is key to targeting inflammation, tissue regeneration, and immune regulation. Mesenchymal stem cells (MSCs) obtained from bone marrow or the umbilical cord have shown evidence of reducing the inflammatory response, stimulating neuronal differentiation, and promoting CNS recovery.

Let’s look in-depth at how MS stem cell treatment works, clinical trials, efficacy, and treatment outcomes within patients.

How do stem cells work in multiple sclerosis?

When given intravenously, intraventricularly, or intraperitoneally, stem cells release anti-inflammatory and neurotrophic molecules that help modulate the immune system and inhibit inflammatory responses in the CNS.

Besides MSCs’ immunosuppressive response, their ability to migrate to damaged or diseased tissues and initiate tissue regeneration also helps reverse the damage caused by MS. They help protect nerve cells from further damage, reduce inflammation and oxidative stress, and repair myelin.

Furthermore, MSCs promote neuronal differentiation and axonal survival by repairing damaged myelin surrounding nerve fibers.

Clinical trials: hopes and results

A recent clinical trial on stem cell-based therapies for multiple sclerosis supports multiple sclerosis stem cell treatment as a potentially powerful and safe cellular therapy for MS. In this trial, stem cells driven from adipose tissue exhibited a remarkable response to targeting inflammation, myelin regeneration and regulating the immune system to prevent disease progression.

Another study conducted in 2020 explored MSCs for their self-renewal, anti-inflammatory, immunomodulatory, and multilineage differentiation capacities. This elaborative study concluded that MSCs are a promising, safe, and feasible treatment option for treating MS patients.

How does the transplant take place?

For stem cells multiple sclerosis therapy, we recommend using multipotent mesenchymal stromal cells (MMSCs) for their strong healing powers and proven benefits. Each patient is injected with tens of millions of these cells during the therapy to ensure that the these cells exceed the daily loss for up to 10 years.

The injection of millions of MSCs is intended to help the body heal, improve symptoms, repair damaged diseased cells, tissues, and myelin, and stop disease progression.

Multiple sclerosis stem cells treatment involves the following steps:

1. **Consultation**. This step involves conducting Initial consultation and collection of previous medical reports.
2. **Case evaluation**. Doctors review the prospects of therapy being effective and conduct tests and procedure preparations.
3. **Pretreatment**. This step involves preparing the patient for necessary treatment or implementing therapies required to increase the procedure's success rate.
4. **Harvesting**. This involves harvesting mesenchymal stem cells from the fat or bone of the patient. This procedure also includes injecting special medications to stimulate granulocyte cell growth.
5. **Separation**. In this step, cells are separated from the rest via centrifuge technology.
6. **Cultivation**. After separation, the cells are cultivated to the required amount to get a cell-based product for the therapy.
7. **Treatment**. The last treatment step involves injecting these activated stem cells via a standard IV drip or another route of administration, depending on the treatment needs and best techniques.

8. **Inpatient treatment**. This step involves patient care post-treatment. While the injected stem cells start replacing the defective ones and restarting the patient's immune system, the patient may experience a weakened immune system, which is why patients are kept under observation for a few days.
9. **Post-treatment consultation**. To track the patient's progress, remote consultations are held.

How effective is the treatment of multiple sclerosis with stem cells?

Multiple sclerosis is an immune dysfunction affecting brain and spinal cord nerve cells, leading to partial paralysis over time. Most drugs or treatment options largely focus on slowing the disease progression rather than treating symptoms, which is why stem cell therapy is considered a breakthrough for various ailments like multiple sclerosis.

Stem cell therapy for MS in the USA has shown some remarkable results in patients experiencing chronic symptoms of MS. Some

of the major outcomes that patients have witnessed after the cell-based therapy are:

- Disability reversal;
- Improved quality of life for patients with relapsing-remitting multiple sclerosis;
- Improved physical and cognitive functions;
- Reduced volume of brain lesions;
- Improved muscle mass;
- Reduced fatigue;
- Reduced disease progression.

Final thoughts

Cell-based therapy offers significant health benefits to people suffering from autoimmune diseases like MS. As research advances, we will most likely be able to fully comprehend the healing abilities of stem cells in curing or even reversing the condition of patients with multiple sclerosis.