MedicalXpress

Japan trial to treat spinal cord injuries with stem cells

February 18 2019

A team of Japanese researchers will carry out an unprecedented trial using a kind of stem cell to try to treat debilitating spinal cord injuries, the specialists said on Monday.

The team at Tokyo's Keio University has received government approval for a trial using so-called induced Pluripotent Stem (iPS) cells—which have the potential to develop into any cell in the body—to treat patients with serious spinal cord injuries.

The trial, expected to begin later this year, will initially focus on four patients who suffered their injuries just 14 to 28 days beforehand, the university said.

The team will transplant two million iPS cells into the spines of the patients, who will then go through rehabilitation and be monitored for a year.

The strict limitations on the number of participants is necessary because the process is an "unprecedented, world first clinical trial", the university added.

"It's been 20 years since I started researching cell treatment. Finally we can start a clinical trial," Hideyuki Okano, a professor of physiology, said at a press conference.

"We want to do our best to establish safety and provide the treatment to

patients," he added.

The study will be carried out on patients aged 18 or older who have completely lost their motor and sensory functions.

There are more than 100,000 patients in Japan who are paralysed due to spinal cord injuries but there is no effective treatment.

The primary purpose of the trial is to confirm the safety of the transplanted cells and the method of the transplant, the researchers said.

The research team hopes to test the efficacy and safety of the treatment for chronic injuries as well in the future if they can confirm the safety of the technique through the clinical trial.

The announcement comes after researchers in Kyoto said in November they had transplanted iPS cells into the brain of a patient in a bid to cure Parkinson's disease.

The man was stable after the operation and he will be monitored for two years.

The researchers injected 2.4 million iPS cells into the left side of the patient's brain in an operation that took about three hours.

Parkinson's disease is a chronic, degenerative neurological disorder that affects the body's motor system, often causing shaking and other difficulties in movement.

iPS cells are created by stimulating mature, already specialised, cells back into a juvenile state—basically cloning without the need for an embryo.

The cells can be transformed into a range of different types of cells, and their use is a key sector of medical research.