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Stem cells injected into brain help stroke patients

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Three quarters of a group of people disabled by stroke have recovered some use of their arms after receiving a pioneering therapy involving stem cells injected into the brain.

The results, from a clinical trial in Glasgow, are the strongest evidence that the jabs can regenerate damaged brain tissue and could become the first effective therapy for one of the most common and debilitating health problems in Britain.

More than 1.2 million people in the UK have survived strokes and half of these live with some kind of disability. At present there is often very little that doctors can do to help them to recover.

Since 2010 scientists at the University of Glasgow and ReNeuron, a biotechnology company based in Guildford, have been testing whether a dose of 20 million "CTX" stem cells delivered directly to the affected part of the brain can rebuild the broken circuits.

These cells, which can be coaxed into becoming almost any kind of human tissue, are one of the most important components of the body's natural repair kit. Long used in bone marrow transplants for treating cancer, they have shown tantalising promise as therapies for a wide range of conditions, from burns to multiple sclerosis, but have also attracted a degree of hype and pseudoscientific claims.

After a solid showing in a pilot study of 11 stroke patients, ReNeuron revealed yesterday that it had tested the therapy on a further 21 people in a phase two clinical trial at eight NHS centres. Seven had a significant improvement in their disability scores over at least three months and another eight had a similar boost to their ability to go about their daily lives.

ReNeuron has now applied to subject the treatment to a larger, placebo-controlled phase three trial that would determine whether it is good enough to be taken up by doctors. Olav Hellebo, chief executive, said the infusions of stem cells appeared to "kick-start" the process of forming new brain cells and blood vessels to keep them supplied with oxygen.

All of the CTX cells are cloned from a single neural stem cell that has been cultivated in the laboratory. A neurosurgeon drills a small hole in the skull and injects the cells, which push out chemicals that are thought to trigger regrowth in the surrounding tissue. The patients are usually ready to leave the hospital the day after the procedure. Keith Muir, professor of clinical imaging at Glasgow and the trial's principal investigator, said the treatment appeared to be safe and had hit all but one of its targets. He added that the CTX procedure showed improvements in specific functions such as arm movement but also in tackling general disability and helping with independence.

Shamim Quadir, of the Stroke Association, welcomed the research and said: "In the UK, someone has a stroke every three and a half minutes and the condition is a leading cause of disability. There are very limited treatment options for people who have a stroke and there is an urgent need for new ways to prevent the condition's debilitating impact."

EDWARD BOLTSMAN