Successful stem cell therapy for treatment of eye disease

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Newly published research, by investigators, at the North East England Stem Cell Institute (NESCI) in the journal *Stem Cells* reported the first successful treatment of eight patients with "Limbal Stem Cell Deficiency" (LSCD) using the patients' own stem cells without the need of suppressing their immunity.

LSCD is a painful, blinding disease that requires long-term, costly treatment with frequent clinic visits and intensive hospital admissions. The vision loss due to LSCD makes this disease not only costly, but often requires social support due to the enormous impact on patient's quality of life. This is further magnified by the fact that LSCD mostly affects young patients.

Dr Francisco Figueiredo, a member of the NESCI team, said, "Corneal cloudiness has been estimated to cause blindness in 8 million people (10% of total blindness) worldwide each year. A large number of ocular surface diseases, both acquired and congenital, share features of partial or complete LSCD. "

Chemical burns to the eye are the most common cause of LSCD.

Professor Lako said: "This study demonstrates that transplantation of cultured corneal stem cells without the use of animal cells or products is a safe and effective method of reconstructing the corneal surface and restoring useful sight in patients with unilateral LSCD.

"This research shows promise to help hundreds of people regain their sight. These exciting results offer a new treatment and hope for people with LSCD."

Professor Michael Whitaker FMedSci, Co-Director of NESCI, which is a collaboration between Durham and Newcastle Universities, Newcastle NHS Foundation Trust and other partners, said: "Stem cells from bone marrow have been used successfully for many years to treat cancer and immune disease, but this is the first successful stem cell therapy using stem cells from the eye without animal products to treat disease, an important step towards the clinic. Because the early results look so promising, we are thinking hard now about how to bring this treatment rapidly into the clinic as we complete the necessary clinical trials, so that the treatment can be shared with all patients that might benefit."

"The Newcastle team has obtained some very impressive results in patients following stem cell transplants to repair the surface of the cornea. It is hugely exciting to see that a type of stem cell therapy can now be applied routinely to treat a form of blindness," said Professor Robin Ali, FMedSci, Department of Genetics, UCL Institute of Ophthalmology, London. "These results also provide us with further encouragement to develop stem cell therapies to repair the retina in order to treat conditions such as age related macular degeneration."

A larger study involving 24 new patients is currently underway with funding from the UK's Medical Research Council.

Source: Wiley (news : web)