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Blind to be cured with stem cells

By: Sarah-Kate Templeton, Health Editor

BRITISH scientists have developed the world's first stem cell therapy to cure the most common cause of blindness. Surgeons predict it will become a routine, one-hour procedure that will be generally available in six or seven years' time.

The treatment involves replacing a layer of degenerated cells with new ones created from embryonic stem cells. It was pioneered by scientists and surgeons from the Institute of Ophthalmology at University College London and Moorfields eye hospital.

This week Pfizer, the world's largest pharmaceutical research company, will announce its financial backing to bring the therapy to patients.

The treatment will tackle age-related macular degeneration (AMD), the most common cause of blindness. It affects more than 500,000 Britons and the number is forecast to increase significantly as people live longer. The disease involves the loss of eye cells.

Under the new treatment, embryonic stem cells are transformed into replicas of the missing cells. They are then placed on an artificial membrane which is inserted in the back of the retina.

Tom Bremridge, chief executive of the Macular Disease Society, said: "This is a huge step forward for patients. We are extremely pleased that the big guns have become involved, because, once this treatment is validated, it will be made available to a huge volume of patients."

Embryonic stem cells have the ability to develop into all types of body tissue. Their use is controversial, however, because it involves the destruction of human embryos.

Laboratory trials completed by the British team have demonstrated that stem cells can prevent blindness in rats with a similar disease to AMD. They have also successfully tested elements of the technology in pigs.

The team is led by Professor Pete Coffey, director of the London Project to Cure Blindness, working alongside Lyndon da Cruz, a surgeon at Moorfields.

Coffey said the treatment would take "less than an hour, so it really could be considered as an outpatient procedure. We are trying to get it out as a common therapy".

He welcomed Pfizer's agreement to manufacture the membranes, saying: "This is a major development because of the size of the partner. We need a big pharmaceutical company to scale it up.

“We have nearly 14m people within Europe with AMD. This will ensure that the therapy gets through to clinical trials in a safe and effective manner.”

Professor Peng Khaw, director of the Biomedical Research Centre at Moorfields and the UCL Institute of Ophthalmology, added: “This shows that stem cell therapy is coming of age. It offers great hope for many sufferers around the world who cannot be treated with conventional treatment.” He added: “All my patients say to me is, ‘When will this stem cell treatment be ready? I want it now’.”

Pfizer’s role would be crucial in bringing production of the membranes to an industrial level.

The team is applying for regulatory approval for trials from the Medicines and Healthcare products Regulatory Agency, the Human Tissue Authority and the gene therapy advisory committee.

The clinical trial, due within two years, is expected to be the second in the world to use embryonic stem cells on humans. The first, on patients with spinal cord injuries, will start this year in America.