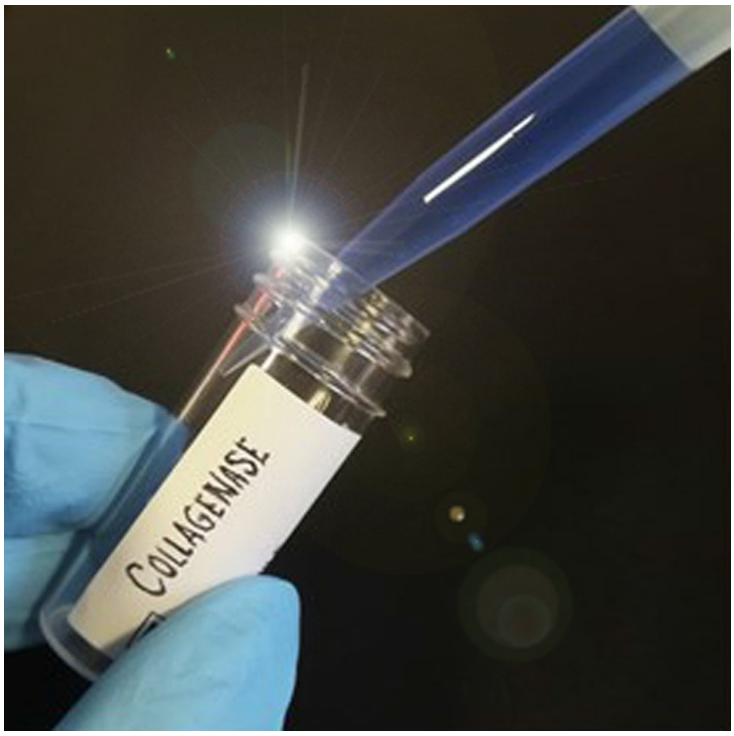
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Hope for restoring sight in acid attack victims

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A revolutionary approach to treating chemical burns in the eye is beginning a clinical trial



For the first time a tissue-softening enzyme, collagenase, will be used in patients who have suffered acid attacks or industrial accidents.

It follows research by a team from Newcastle University, UK, who earlier this year showed that applying collagenase to the cornea softens the underlying tissue allowing the stem cells situated there to repair any damage.

The first-in-man trial will examine how effective the enzyme is at softening the underlying tissue in the eye allowing the patient's own stem cells to repair the damage and restore the patient's sight.

Every year, about 2 million people worldwide become blind due to corneal trauma, with one in every five cases caused by chemical burns to the eye.

The trial involving 30 patients is funded by the Ulverscroft Foundation, a UK charity that supports organisations helping the visually impaired. It will be carried out in collaboration with Dr Sayan Basu and Dr Vivek Singh at the world-renowned LV Prasad Eye Institute in Hyderabad, India.

Professor Che Connon, the director of the study and leader of the Tissue Engineering Lab at Newcastle University said: "The simplicity and relative low cost of this therapy compared to existing approaches in which stem cells have to be transplanted is a game-changer. It greatly expands the number of potential patients being treated for corneal burns across the world and may

well have applications in other diseases.”

Previous research by the Newcastle team recreated the effects of chemical burns in rabbit and donor corneas and treated the wounded, stiffened areas of the cornea using small and localised doses of collagenase. The enzyme made the area once again pliable and able to support the patient’s own stem cells and promote healing.

The collagenase formulation has already been approved for related therapeutic applications by both the US Food and Drug Administration and the European Medicine Agency so the team were quickly able to take it into clinical trial. Dr Ricardo Gouveia, Research Fellow at Newcastle University and lead author of the research is very optimistic about this next stage, he said: “As a scientist it is exceptionally rewarding to be involved in a bench-to-bedside project, using a scientific discovery to create a new treatment that benefits patients and helps improve lives. This is especially true when such work is made possible by the support of an organisation like the Ulverscroft Foundation.”

The Ulverscroft Foundation was founded as a charity in 1973 to help visually impaired people. It supports research into the diagnosis and treatment of eye diseases, and funds medical equipment and facilities.

Suitable participants for the trial will be selected by an assessment team at the LV Prasad Eye Institute in India after rigorous medical and ethical approval, and results from the trial are expected in 2021.