# The use of human amniotic membrane-derived material in ocular surface healing promotion: a 2.5-year retrospective study

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## Introduction

The human amniotic membrane (hAM) is the inner, foetal-derived, avascular layer of the foetal membrane. It has anti-inflammatory, anti-angiogenic, anti-scarring and pro-epithelisation effects, which encourages ocular surface healing.

Omnigen© (NuVision Biotherapies, UK) is a dried and stable hAM-derived material that can be stored between 2-25ºC, which can be applied to the ocular surface via OmniLenz in an outpatient setting.

This retrospective study aims to evaluate its use in a tertiary Corneal Unit (Bristol Eye Hospital), including patient characteristics and their clinical outcomes.




## Methods

Retrospective case review of all patients who received Omnigen implants between March 2020 and August 2022. Patient list was identified via hospital ordering record of the implants.

## Results

26 eyes of 25 patients received Omnigen during this period. The mean age was 57.7+/-20 (range 21-89). 42% (11) were female and 46% (12) were right eyes.

Most common indication for its use was persistent corneal epithelial defect (PCED) (21, 81%). Other causes were corneal graft melt, surgically induced necrotising sclerokeratitis, decompensating cornea and post repair of globe rupture.

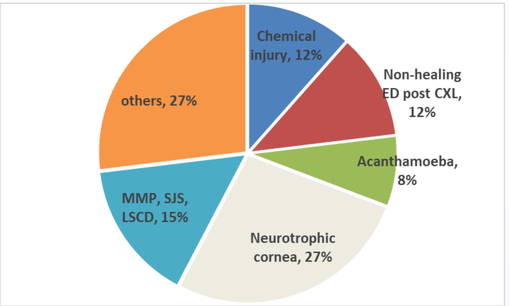
In terms of underlying pathologies, 7 had a background of neurotrophic corneas, 3 post-collage crosslinking, 2 OCP, 3 chemical injuries, 2 acanthamoeba keratitis and 7 had other causes.

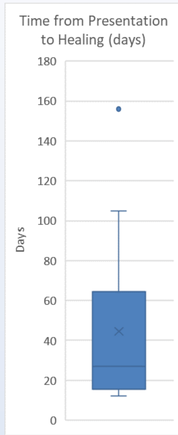
PCED dimensions were recorded in 12 eyes, with mean estimated area of 7.56+/-6.0mm$^2$ (range 1.2-22.6mm$^2$). Of the ones that healed, mean PCED closure rate post-Omnigen was 0.24mm$^2$/day (range 0.008-0.71mm$^2$/day).

In terms of concomitant medications, 92% (24) also received topical antibiotics, 77% (20) received topical steroids and 54% (14) received oral anti-proteases.

77% (20) eyes have healed, with a duration of 45 +/- 39 days, while 4 eyes (15%) deteriorated.

Of the 22 eyes with documented final visual acuities, mean LogMAR was 1.13+/-0.63 (plus 1 NPL). 88% (22) patients have not been discharged, demonstrating the clinical complexity of this cohort of patients.




## Conclusions

The study demonstrates largely favourable outcomes from Omnigen use. The use of Omnigen presents an alternative treatment option for patients with PCED, providing a convenient and effective treatment that can be administered in an outpatient setting.

This study has provided valuable insights into the use of Omnigen and its effectiveness in promoting ocular surface healing. Further research is required to determine the full potential of this treatment option. A prospective study examining the rate of PCED healing after Omnigen application is underway.

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Image: https://www.nu-vision.co.uk/wp-content/uploads/2021/01/OmniLenz-Brochure.pdf