MANAGEMENT OF PERSISTANT CORNEAL EPITHELIAL DEFECTS WITH OMNILENZ

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Introduction

- Amniotic membrane transplantation has been widely used in treating various ocular surface disorders, principally following pterygium removal, surgical correction of cicatricial complications of ocular surface and limbal stem cell deficiency
- It provides basement membrane for epithelialisation of ocular surface
- Omnigen represents a dry processed amniotic membrane that can be directly applied to the ocular surface with its adaptation of easily applicable contact lens design (OmniLenz) allowing rapid in vivo rehydration from eye moisture.
- There are no reported outcomes in literature with the use of such lens secured amniotic membrane for ocular surface disorders particularly persistent corneal epithelial defects of various aetiologies.

Methods

- Retrospective analysis of OmniLenz applications at Queen Victoria Hospital, UK between January 2018 and March 2019.
- Primary outcome measure: healing of persistent corneal epithelial defects.. Secondary outcome measure: Visual outcomes (BCVA), Aetiologies of persistent epithelial defects(PED), Time to heal, concomitant medications, Number of applications per defect

Results

Age	
Mean Age	54.8
Standard Deviation	24.2

Gender Split	
Male	60
Female	33

Length of Treatment		
	All Patients	Healed Patients
Average treatment length (Mean (Days))	22.4	25.3
Standard Deviation (Days)	12.3	13.1

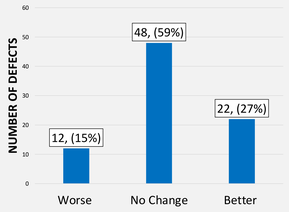
Patient Cohort	
Number of Patients	86
Number of Defects	93
Number of Applications	107

Treatment (No. of Applications)	
One OmniLenz	83
Two OmniLenz	7
Three OmniLenz	2
Four OmniLenz	1

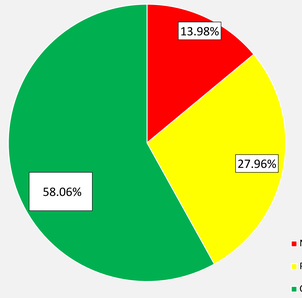
Etiology			
Etiology	Number of Patients	Number of Applications	Number of Defects
Exposure Keratopathy, Proptosis, Thyroid Eye Disease	2	8	4
Infection, Microbial Keratitis	15	17	15
Infection, Perforated Ulcerative Keratitis from Photorefractive Keratectomy	1	1	1
PED from PK, DALK or DSAEK	16	19	16
LSCD, Herpes Simplex Keratitis	3	3	3
LSCD, Rosacea	3	4	3
LSCD, Chemical Burns	9	14	10
LSCD, Aniridia	8	12	12
LSCD, SJS	9	12	12
LSCD, Radiotherapy	3	3	3
Neurotrophic Cornea	4	4	4
Bilateral Anterior Segment Dysgenesis	2	2	2
Fuchs Endothelial Dystrophy	2	2	2
Others	6	6	6
Excluded	3	-	-
Total Records Studied:	86	107	93

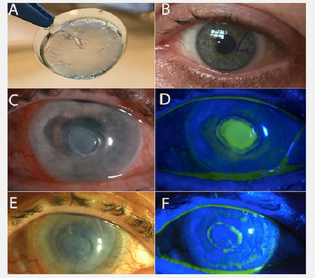
Concomitant Medications	
Medication	Number of Defects
Topical Antibiotics	86
Topical Steroids	64
Topical Immunotherapy	16
Systemic Immunotherapy	9
Lubricating Eye Drops	40
Anti-Glaucoma Medications	11
Tarsorrhaphy	8
Plasma Eye Drops	18

Data corresponding to the change in Best Correct Visual Actuity (BCVA) of all defects treated with OmniLenz between January 2018 - November 2019



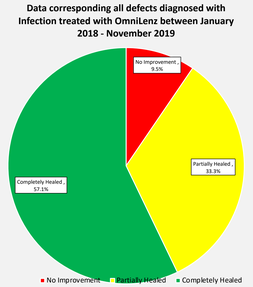
Data corresponding to the healing of all defects treated with OmniLenz between January 2018 - November 2019



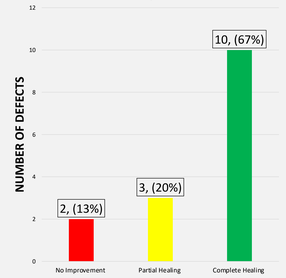


***A);** Omnigen held in situ with OmniLenz **(B);** Diffuse view **(C)** and fluorescein stained view **(D)** of non-healing (4 months) neurotrophic keratopathy refractory to standard of care. Ulcer is centrally located on the cornea, involving the visual axis and affected vision. Extensive inflammation can be seen; diffuse view of OmniLenz in situ over the ulcer 2-weeks after application **(E).** The outline of the Omnigen disc can be seen covering the epithelial defect, **(F).** fluorescein stain following a 2-week treatment and removal of OmniLenz showing the epithelial defect fully healed and pooling of dye along the edge.*

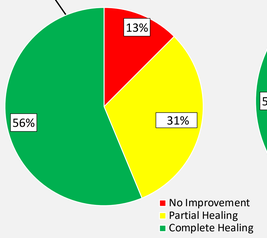
Data corresponding all defects diagnosed with Infection treated with OmniLenz between January 2018 - November 2019



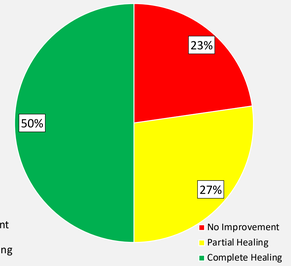
Data corresponding all defects diagnosed with Infection and Microbial Keratitis treated with OmniLenz between January 2018 - November 2019



Data corresponding all defects diagnosed with a Persistent Epithelial Defect caused by PK, DALK or DSAEK treated with OmniLenz between January 2018 - November 2019



Data corresponding all defects diagnosed with PED's due to LSCD treated with OmniLenz between January 2018 - November 2019



Conclusion

- OmniLenz is easily applied in clinical settings in eyes with persistent corneal epithelial defects. Its transparency allows easy visualisation and examination of the cornea
- Its use has demonstrated the safety and efficacy of a new tool in the management of persistent corneal epithelial defects
- Our results shows efficacy of OmniLenz in treating infections in conjunction with antibiotics but further studies with larger number of infected cases is needed.

References

Prabhasawat P, Barton K, Burkett G, et al. Comparison of conjunctival autografts, amniotic membrane grafts, and primary closure for pterygium excision. Ophthalmology 1997;104:974–85., Tseng SCG, Prabhasawat P, Barton K, et al. Amniotic membrane transplantation with or without limbal allografts for corneal surface reconstruction in patients with limbal stem cell deficiency. Arch Ophthalmol 1998;116:431–41., Jain S, Rastogi A. Evaluation of the outcome of amniotic membrane transplantation for ocular surface reconstruction in symblepharon. Eye (Lond) 2004;18:1251–1257, Shimazaki J, Shinozaki N, Tsubota K. Transplantation of amniotic membrane and limbal autograft for patients with recurrent pterygium associated with symblepharon. Br J Ophthalmol 1998;82:235–40., Sato H, Shimazaki J, Shimazaki N, et al. Role of growth factors for ocular surface reconstruction after amniotic membrane transplantation. Invest Ophthalmol Vis Sci 1998;39:S428.