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Speaker's name : Tuna Celik Buyuktepe

I do not have any potential conflict of interest

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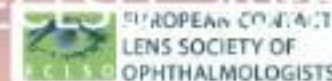
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THERAPEUTIC USE OF SILICONE HYDROGEL CONTACT LENSES IN THE TREATMENT OF SEVERE DRY EYE

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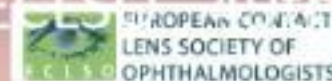
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Introduction and Aim

- Discomfort and visual problems due to dry eye disease can be difficult to manage.
- The prevalence and burden of the disease continues to grow at a rapid pace [1].
- Current treatment of dry eye disease aims to replace natural tears (artificial lubricants), to slow down the tear turnover (punctal occlusion), and to control the inflammatory pathophysiology of the disease.
- However, these treatment strategies may not always be effective, especially in patients with moderate to severe dry eye disease, in which case we get help from therapeutic use of soft contact lenses.
- This study aims to report our clinical experience with silicone hydrogel extended wear contact lenses when used for therapeutic purposes in dry eye disease refractory to medical therapy.

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Methods

- Retrospective, cross-sectional
- Severe dry eye patients, refractory to conventional therapies
- Treated with silicone hydrogel contact lenses (lotrafilcon A) longer than 10 days
- Success was defined as improved ocular surface findings (i.e. Schirmer-I, BUT) and/or improved OSDI score.
- Before lens fitting & Post-treatment month-1
 - Best spectacle-corrected distance visual acuity (CDVA)
 - Slit lamp biomicroscopy
 - Schirmer I test
 - Tear break-up time (BUT)
 - Fluorescein corneal staining
 - Ocular surface disease index (OSDI) questionnaire

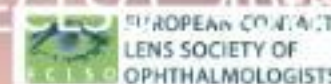
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Results

- Overall 22 eyes of 15 patients
- Mean age of 51.5±17.6 years (9-74 years)
- Mean duration of contact lens wear:
128.5±192.7 days (31.5; 11-667 days)
- Grading of dry eye;
 - Grade 4: 11 eyes (50%)
 - Grade 3: 10 eyes (45%)
 - Grade 2: 1 eye (5%)
- Reason for dry eye;
 - Chronic graft-versus-host disease (cGVHD): 9 eyes (40.9%)
 - Primary Sjogren's syndrome: 13 eyes (59.1%)

	Baseline	Month-1	p
UDVA (logMAR)	0.45±0.32	0.34±0.32	0.469
CDVA (logMAR)	0.32±0.33	0.18±0.16	0.705
NIBUT (sec)	2.72±2.34	4.20±4.12	0.328
BUT (sec)	2.73±1.70	4.24±2.92	0.028
Schirmer-I (mm)	3.18±3.50	4.44±3.29	0.046
Fluorescein (grade)	2.59±0.91	2.22±1.06	0.132
OSDI	54.50±16.11	45.50±17.81	0.030

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Results

- Compared to baseline, at month-1, statistically significant improvements were observed in:
 - dry eye symptoms
 - ocular surface findings (BUT/Schirmer-I)
- The patients also reported reduced use of topical lubricants.
- Therapeutic use of CLs were considered successful in 90.9% of cases
- Infectious keratitis (n=1)
 - 9 yo. GvHD
 - At month-2.5, paracentral infiltrate, culture -ve
 - PACK-CXL, topical antibiotic + antifungal
 - Healing with scar in 2 weeks
- Fibrinous anterior uveitis (n=1)
 - 37 yo, GvHD
 - At month-9, <1mm hypopyon, topical loteprednol 3x1
 - Resolution in 3 days

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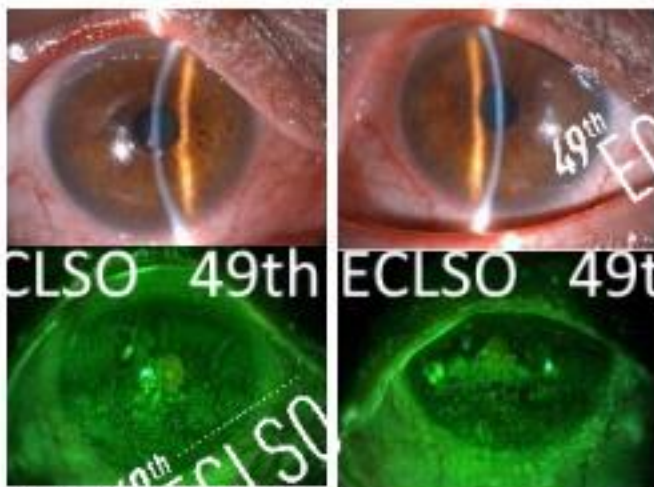


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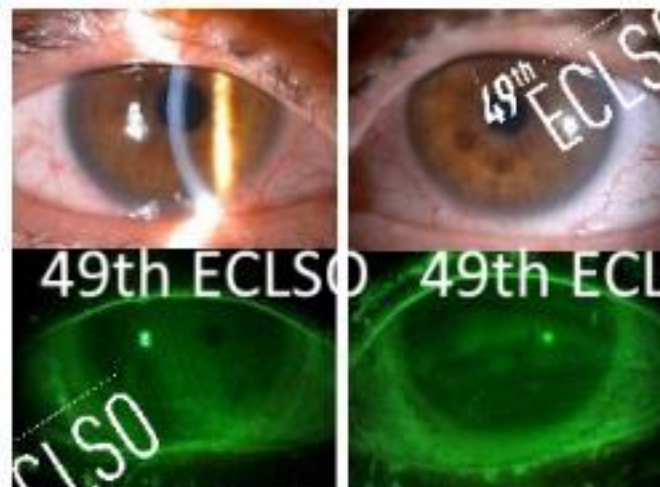
Case 1

- 71 years old, female, Sjögren's Syndrome, Cataract surgery
- Autologous serum 4x1
- 0.02% Cyclosporin-A 1x1
- 0.2% Hyaluronic acid + 0.15% sodium hyaluronat 4x1
- 3% Trehaloz + 0.15% sodium hyaluronat + 0.25% carbomer 2x1

	baseline	1-month
CDVA (logMAR)	1/1	1/1
NIBUT (sec)	N/A	1.65/3.35
BUT (sec)	1/1	2/4
Schirmer (mm)	2/1	1/2
OSDI	45.83	37.5



Right and left eyes at baseline



Right and left eyes at month-1

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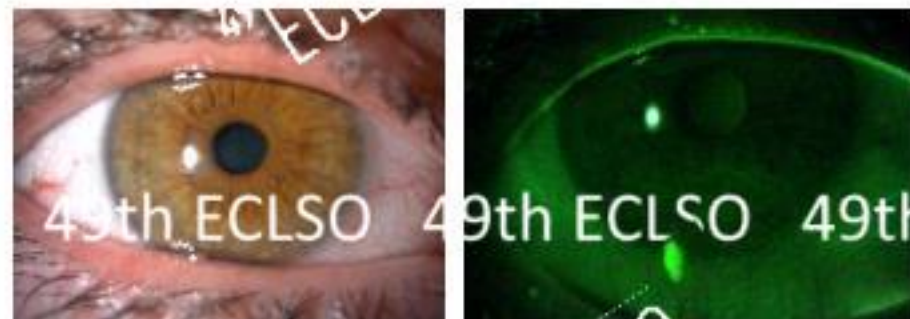
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Case 2

- 56 years old, female, Sjögren's Syndrome
- 0.02% Cyclosporin-A 4x1
- 0.34% Hyaluronic acid + carbomer + glycerol + medium chain triglycerides 4x1
- 3% Trehaloz + 0.15% sodium hyaluronat 3x1
- 0.2% Carbomer 1x1

	Baseline	1-month
CDVA (logMAR)	0	0
NiBUT (sec)	4.2	6.3
RUT (sec)	5	8
Schirmer (mm)	8	8
OSDI	25	25



Right eye at baseline (top) and at month-1 (bottom)

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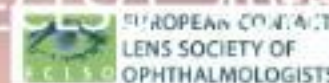
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Discussion

- Contact lens wear reportedly increases the risk of dry eye disease [2].
- Conversely, soft contact lenses have traditionally been used in the treatment of dry eye disease.
- New-generation lenses made of silicone hydrogel material have higher oxygen diffusion capacity, thus enabling safe extended-wear without development of corneal neovascularization [3].
- Extended-wear contact lenses are used in the management of a wide variety of corneal and ocular surface diseases mainly for pain relief, enhancing corneal healing, corneal sealing, corneal protection, and drug delivery.
- Previously, Russo et al. evaluated safety and efficacy of extended-wear silicon hydrogel contact lenses in refractory dry eye cases secondary to GvHD. They reported significant improvement of visual acuity and patients symptoms [1].
- Similarly, in a prospective randomized study conducted with dry eye cases secondary to Sjögren's Syndrome, extended-wear silicone hydrogel contact lenses were found to be effective in the management of dry eye disease [4].

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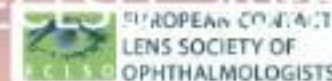
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Discussion & Conclusion

- In our study, extended-wear silicone hydrogel contact lenses provided significant symptomatic relief and improvement of ocular surface findings in severe dry eye disease refractory to medical therapy.
- GVHD cases fit with therapeutic CLs need to be followed closely to avoid serious infectious complications, due to the underlying immunosuppression.

Acknowledgement and References

1. Russo PA, Bouchard CS, Galasso JM. Extended-wear silicone hydrogel soft contact lenses in the management of moderate to severe dry eye signs and symptoms secondary to graft-versus-host disease. *Eye Contact Lens*. 2007 May;33(3):144-7.
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4. Li J, Zhang X, Zhang Q, et al. Comparative Evaluation of Silicone Hydrogel Contact Lenses and Autologous Serum for Management of Sjögren Syndrome-Associated Dry Eye. *Cornea*. 2015 Sep;34(9):1072-8