

Biomicroscopy signs and subjective symptoms through 12 months among patients wearing a high Dk silicone hydrogel soft contact lens

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High oxygen permeable soft contact lenses made using the silicone hydrogel material lotrafilcon A were introduced internationally in 1998 and in the US in 2002. The oxygen permeability, movement and wetting performance of this material has allowed eyecare practitioners to recommend continuous wear for up to 30 nights. Several reports from international experience have been made of the clinical and subjective suitability of lotrafilcon A contact lenses.^{1, 2, 3, 4.}

Purpose

To report changes in a range of biomicroscopy signs and subjective symptoms through 6 months among patients in the US who were dispensed to wear a lotrafilcon A high oxygen permeable silicone hydrogel soft contact lens.

Methods

19 sites in the US fitted and dispensed 317 patients for bilateral wear of lotrafilcon A silicone hydrogel soft contact lenses and 85 patients for bilateral wear of 2-weekly replacement daily wear soft contact lenses. Patients will be followed for up to 3 years. Data through 6 months is complete. Data through 12 months is complete for approximately 84% of active patients in the lotrafilcon A group. This report is for the lotrafilcon A group only.

In the lotrafilcon A group, 286 patients were habituated contact lens wearers and 31 patients had never worn or formerly wore contact lenses.

Biomicroscopy grades for 10 signs using a 0 (none) to 4 (severe) scale and subjective frequency and severity of 10 symptoms using a 0 (none) to 3 (every day or severe) scale were taken at dispensing and at each follow-up visit. Average biomicroscopy grades were calculated using each eye as an individual unit. Average symptom frequency and severity grades were calculated using the patient as the unit.

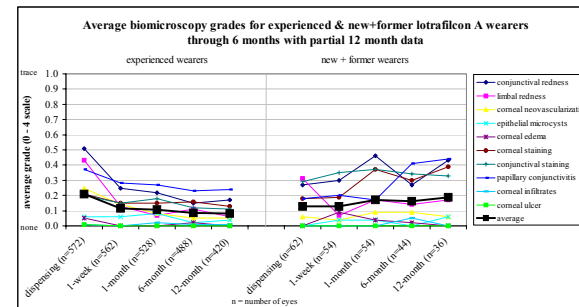
Gender distribution (n, %)	
Female	211, 67%
Male	106, 33%
Age (years)	
Average ± sd	37.6 ± 11.1
Maximum	72
Minimum	13
Spectacle refraction (average ± sd, max, min)	
Sphere power in diopters	-3.36 ± 2.71, +6.50, -10.75
Cylinder power in diopters	-0.31 ± 0.34, 0.00, -1.50
Axis in degrees	64° ± 69°, 180°, 0°
Keratometry (average ± sd, max, min)	
Horizontal power in diopters	44.09 ± 1.45, 49.13, 39.50
Vertical power in diopters	44.66 ± 1.50, 49.62, 39.75
Axis in degrees	92° ± 37°, 180°, 0°
Contact lens experience (n, %)	
Current SCL wearer	286, 90%
Former SCL wearer	26, 8%
New SCL wearer	5, 2%

brand name	Focus [®] NIGHT & DAY [™]
material	Lotrafilcon A
% water	24%
Dk	140 barrers
Dk / t	175 barrers/cm
modulus	1.2 Mpa
base curve	8.4 & 8.6 mm
diameter	13.8 mm
Rx range for trial	-10.00 to +6.00 diopters

Results for biomicroscopy signs

Among habituated contact lens wearers, average improvements were seen for 7 of 10 biomicroscopy signs through 12 months for bilateral wear of lotrafilcon A silicone hydrogel soft contact lenses. Biomicroscopy signs of conjunctival redness and limbal redness showed the greatest average change with 0.3 and 0.4 improvements, respectively. Corneal neovascularization averaged 0.2 grade improvement. Overall, biomicroscopy signs among experienced wearers improved 0.1 grade.

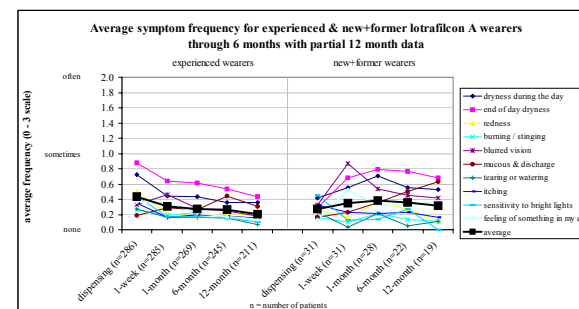
Among new and former wearers, biomicroscopy signs remained unchanged between dispensing and 12 month visits for 5 of 10 signs. Limbal redness improved 0.1 on average through 12 months. Papillary conjunctivitis increased an average of 0.3 grade over the period.



Results for frequency of subjective symptoms

Among experienced wearers, reductions in frequency for 9 of 10 subjective symptoms were reported through 12 months. The greatest average improvements were between dispensing and 1-week. Frequency of dryness symptoms showed the most improvement. Frequency of mucous & discharge were reported to slightly increase.

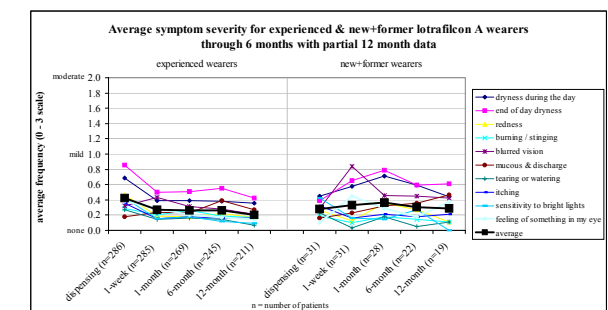
Among new and former wearers, increases and decreases in the frequency of subjective symptoms through 12 months were about equally balanced. Frequency of mucous & discharge showed the most increase. Overall, frequency of symptoms showed no change through 12 months.



Results for severity of subjective symptoms

Among experienced wearers, average improvements were reported for the severity of 9 of 10 symptoms. Severity of dryness, redness and photophobia showed the most improvement over 12 months. On average, severity of symptoms improved 0.2 grades.

Among new and former wearers, severity for 4 of 10 symptoms increased slightly. Overall, the average severity of symptoms showed no change through 12 months.



Discussion / conclusion

Improvements in many biomicroscopy signs may be seen among experienced soft contact lens wearers who change to high oxygen permeable lotrafilcon A silicone hydrogel soft contact lenses. Few changes in biomicroscopy signs may be noted among new or former contact lens wearers.

Improvements in both frequency and severity of subjective symptoms may be reported by experienced contact lens wearers who change to lotrafilcon A lenses. The most dramatic improvements in frequency and severity of symptoms may be in the first week after changing. New or former wearers may show little change in frequency or severity of symptoms. Biomicroscopy signs and subjective symptoms among new or former wearers who begin wearing lotrafilcon A soft contact lenses may be lower or improved as compared to wearing low oxygen permeable hydrogel soft contact lenses.

The effect of improved corneal oxygenation and performance characteristics of lotrafilcon A silicone hydrogel soft contact lenses may benefit eye health and patient satisfaction.

References

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