

Contact Lens Update

CLINICAL INSIGHTS BASED IN CURRENT RESEARCH

A meta-analysis of studies on cosmetically tinted soft contact lenses

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Doerte Luensmann is a clinical scientist at the Centre for Contact Lens Research, in the School of Optometry at the University of Waterloo, Canada.

Hydrogel contact lenses with cosmetic tints have been available for decades; however the introduction of new designs with coloured limbal rings to enhance the size of the eye increased the market share, particularly in the Asian countries. While coloured lens fittings in Europe and the US account for less than 10% today, they reach $\geq 30\%$ in countries like China, Singapore and Korea¹.

Marjorie J Rah, Jeffery Schafer, Lening Zhang, Osbert Chan, Lipika Roy, and Joseph T Barr A meta-analysis of studies on cosmetically tinted soft contact lenses Clin Ophthalmol. 2013; 7: 2037–2042. Published online Oct 11, 2013. doi: 10.2147/OPHTH.S51600PMCID: PMC3798236

Rah et. al. conducted a meta analysis to determine the safety of cosmetically tinted hydrogel lenses, which have been investigated in six different studies over periods of one week to three months. All studies were sponsored by Bausch & Lomb Inc. In five of the six studies, a bilateral, single arm, open label design was used; one study further included a different lens type and a parallel bilateral, randomized open label design. The lenses were all manufactured by Bausch & Lomb Inc. and included:

- Naturelle limbal ring daily disposable lenses
- Lacelle limbal ring daily disposable lenses
- Lacelle colored cosmetic daily disposable lenses
- Lacelle limbal ring planned replacement lenses (two weeks)
- Alamode traditional/annual coloured cosmetic lenses

Ocular outcome variables

Data from 871 experienced lens wearers (1228 visits) were included in the meta analysis and outcome variables from slit-lamp examinations comprised of epithelial edema, epithelial microcysts, corneal staining, bulbar injection, limbal injection, upper lid tarsal conjunctival abnormalities, corneal neovascularization, and corneal infiltrates. Each of these conditions was clinically graded for severity from 0=no finding to 4=severe finding. Contrast logMAR visual acuity with lenses and lens wearing time, movement and centration were also reported.

Results

The average study lens wear time was 10.1 ± 2.8 hours per day and lens centration was typically graded as “excellent” or “good” while lens movement was graded adequate or better in 77-83% of all participants, depending on the study visit. Mean high contrast distance logMAR visual acuity with the study lenses was 0.0002 ± 0.0715 .

Slit-lamp findings were < grade 2 for any finding, with the exception of corneal staining which was a grade 3 in five eyes across all participants and visits.

Comparison to the current literature: Prescribing and compliance make the difference!

A number of significant ocular complications with coloured lens wear have been reported^{2, 3}. These were typically non-corrective lenses, which had been sold to naïve lens wearers by unlicensed retail vendors such as gas stations, flea markets, video stores, grocery stores, or mini-marts. As a result, no eye exams were performed and no instructions were given on proper lens wear and care. During Rah's short term studies, no sight threatening adverse events were reported for any of the participants included in the meta analysis.

The authors emphasized that potential complications related to compliance are not limited to cosmetically tinted contact lenses and further stated that cosmetically tinted hydrogel lenses appear to be safe when prescribed by an eye care professional and worn by experienced users in a compliant manner.

REFERENCES

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3. Steinemann TL, et al. Over-the-counter decorative contact lenses: Cosmetic or medical devices? A case series. Eye & Contact Lens, 2005;31(5): 194-200.