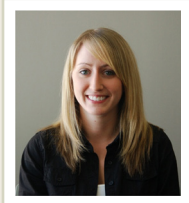


Contact Lens Update

CLINICAL INSIGHTS BASED IN CURRENT RESEARCH

Age and other risk factors for corneal infiltrative and inflammatory events in young soft contact lens wearers: A Review

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Chalmers et al.¹ suggest that there could be a sizeable increase in number of myopic children and teens who wear contact lenses in the near future. This is because the results of early trials on children have shown that it may be possible to slow the progression of myopia by using contact lenses that correct peripheral refractive error. If this demand materializes it will be necessary to establish that soft contact lenses can be worn as safely by children and teens as adults.

Chalmers RL, Wagner H, Mitchell GL, et al. Age and other risk factors for corneal infiltrates and inflammatory events in young soft contact lens wearers from the Contact Lens Assessment in Youth (CLAY) Study. Invest Ophthalmol Vis Sci 2011;52(9): 6690-6696.

Chalmers et al.¹ go on to cite a number of papers²⁻⁴ that suggest soft contact lens wearers younger than 25 years are at greater risk of developing corneal inflammatory events (CIEs). This statement is a little misleading, but the authors do add the qualification that soft contact lens wearers younger than 18 have not been studied in sufficient numbers to establish the risk among children and teens.

In addition, Szcotka-Flynn³ and McNally⁴ studied risk factors for corneal infiltrative events and found that overnight wear had the highest risk factor. This is also a well-established finding for microbial keratitis. However the vast majority of patients wear their lenses during the day and not overnight. Thus there is a need to determine the risk factors for CIEs in young soft contact lens wearers.

The study was designed to determine the role of age within a range of 8 and 33 years and other risk factors in the development of CIEs. A large, multicentre, retrospective chart review of young soft contact lens wearers was necessary to determine these risks.

The chart reviews were done at six North American university eye care clinics. Each site had to demonstrate the availability of sufficient soft contact lens wearers between the ages of 8 and 12 years. In order to detect a 40% reduction in the CIE rate of the 8-12 age group compared with the 18-25 age group, 3324 soft contact lens wearers needed to be sampled, with oversampling of the 8-12 age group. Events that were potentially symptomatic CIEs, iritis or microbial keratitis were adjudicated by an expert panel. The inclusion criteria for refractive error was between +8.00 and -12.00 in wearers with good ocular health.

Chart reviews resulted in 187 events from 168 patients, or 4.7% of the enrolled patients. The risk of CIEs increased nonlinearly up to age 21 and then decreased similarly, with the risk peaking at age 15-25. Patient age, years of contact lens wear, use of a multipurpose lens care system, extended wear and wear of silicone hydrogel lenses were all significant risk factors for CIEs. Six (75%) of the eight microbial keratitis patients and 23 (56%) of the 41 contact lens peripheral ulcer cases in this study were between the ages of 15 and 25. Numerous factors

may contribute to the higher CIE risk in this age group, such as inexperience accessing health care/delay in care, poor sleeping habits, an upregulation of autoimmune reactions in late adolescence or poor self-management steps to optimize the safety of soft contact lens wear.

Conclusions

The CLAY study demonstrates that CIEs appear to occur more prevalently in adolescence and early adulthood, but the most important outcome was that patients aged 8 to 15 presented with significantly fewer CIEs. With the likelihood that more children will be wearing soft contact lenses in the future, this was an important study to establish the relative risk of inflammatory events in children and that soft contact lenses are an acceptable method of correcting refractive error in children.

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