Korb Award Lecture
Contact lens induced end-of-day discomfort – still an enigma after all these years
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The development of products for contact lens wear in the last two decades has been quite remarkable. Almost anyone requiring refractive correction should be able to wear contact lenses, yet only 20 percent of the potential 200 million North Americans who require some form of refractive correction wear contact lenses. The growth of the wearer base in the last decade has only been about 2 percent per annum and the reason for the stunted growth has been premature discontinuation of lens wear. Simplistically, almost as many abandon lens wear as new wearers begin. The primary reason for discontinuation is discomfort and more specifically the problem is end-of-day discomfort. Current etiological evidence of this age-old anguishing enigma and how to ameliorate and in some cases eliminate the problem was presented.

While only a few people have studied discontinuation of contact lens wear, it appears that little has changed over the last 20 years. Similar percentages of people appear to be dropping out of contact lens wear, although the annual discontinuation rate is still speculative at 10 - 15 percent. The reasons for discontinuation also haven’t changed, with discomfort and dryness being the primary reasons followed by ocular hyperemia, poor vision (primarily because of inadequate correction of presbyopia), and inconvenience associated with lens wear.

Acute, sudden and intense (often unilateral) discomfort is fairly well understood and manageable, but it is the chronic, less intense discomfort/dryness towards the end of the wearing time that is the enigma. There are obviously many potential causes of this malady. The most likely is a feature that is common to all soft contact lenses: increased friction. This presumably occurs as the lens surface loses wettability during the day. The interaction of ocular tissue with the lens surface, both on the front (predominantly) and back surface give rise to this adverse sensation resulting from depletion and other changes in the tear film.

Manufacturers have attempted to preserve lens water retention (both surface and bulk) thereby ensuring that the surfaces remain lubricious. Incorporating wetting agents into the conditioning solution has been another common strategy. Because some of these novel attempts are new to the market, independent research is needed to demonstrate whether these strategies will significantly decrease end-of-day discomfort.

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