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Abstract: The Incidence of Contact Lens-Related Microbial Keratitis in Australia

The objective of this study was to establish the absolute risk of contact lens (CL)-related microbial keratitis, the incidence of vision loss and risk factors for disease. It was a prospective, 12-month, population-based surveillance study. New cases of CL-related microbial keratitis presenting in Australia over a 12-month period were identified through surveillance of all ophthalmic practitioners (numerator). Case detection was augmented by records' audits at major ophthalmic centers. The denominator (number of wearers of different CL types in the community) was established using a national telephone survey of 35,914 individuals.

Cases and controls were interviewed by telephone to determine subject demographics and CL wear history. Visual outcomes were determined six months after the initial event. Annualized incidence and confidence intervals (CI) were estimated for different severities of disease and multivariable analysis was used in risk factor analysis. The main outcomes measured included annualized incidence (with CI) of disease and vision loss by CL type and wear modality and identification of independent risk factors.

Researchers identified 285 eligible cases of CL-related microbial keratitis and 1798 controls. In daily wear rigid gas-permeable CL wearers, the annualized incidence per 10,000 wearers was 1.2 (CI, 1.1-1.5); in daily wear soft CL wearers 1.9 (CI, 1.8-2.0); soft CL wearers (occasional overnight use) 2.2 (CI, 2.0-2.5); daily disposable CL wearers 2.0 (CI, 1.7-2.4); daily disposable CL wearers (occasional overnight use) 4.2 (CI, 3.1-6.6); daily wear silicone hydrogel CL wearers 11.9 (CI, 10.0-14.6); silicone hydrogel CL wearers (occasional overnight use) 5.5 (CI, 4.5-7.2); overnight wear soft CL wearers 19.5 (CI, 14.6-29.5) and in overnight wear of silicone hydrogel 25.4 (CI, 21.2-31.5). Loss of vision occurred in 0.6 per 10,000 wearers. Risk factors included overnight use, poor storage case hygiene, smoking, Internet purchase of CLs, <6 months wear experience, and higher socioeconomic class.

The researchers concluded that incidence estimates for soft CL use were similar to those previously reported. New lens types have not reduced the incidence of disease. Overnight use of any CL is associated with a higher risk than daily use. *Stapleton F, Keay L, Edwards K, Naduvilath T, Dart JK, Franzco GB, Holden B. The Incidence of Contact Lens-Related Microbial Keratitis in Australia. Ophthalmology. 2008 Jun 4.*

The Incidence of Contact Lens – Related Microbial Keratitis in Australia

MODALITY	LENS CATEGORY			
	RGP	Hydrogel	Daily Disposable	Silicone Hydrogel
Daily Wear	1.2	1.9	2.0	11.9
Occasional Overnight Wear	N/A	2.2	4.2	5.5
Overnight Wear	N/A	19.5	N/A	25.4