

# EPIDEMIC KERATOCONJUNCTIVITIS: AN OUTBREAK IN NEW SOUTH WALES

**Kerri A. Viney**

*NSW Public Health Officer Training Program*

*NSW Department of Health*

**Con Petsoglou**

*Save Sight Institute*

*University of Sydney*

**Bridget K. Doyle**

*NSW Department of Health*

This article describes a Bug Breakfast Seminar held in August 2006 about the investigation of an outbreak of epidemic keratoconjunctivitis that had occurred in regional NSW in March 2006.

Viral conjunctivitis is the most common form of ocular morbidity, with epidemic keratoconjunctivitis being the most severe form. Epidemic keratoconjunctivitis is caused by an adenovirus, most frequently subgenus D and serotypes 8, 19 or 37. The symptoms include watery eyes, pain, headache, malaise, fever, swelling, redness and lymphadenopathy. Complications such as corneal and conjunctival scarring and impaired vision are common and may be permanent. Symptoms begin approximately five to 14 days after exposure and patients are typically infectious from two days before the onset of symptoms until two weeks after.

The reservoir of adenovirus that causes epidemic keratoconjunctivitis is human and it is transmitted via direct contact with the eye secretions of an infected person or indirectly through contact with contaminated objects. Transmission within the community occurs by eye to hand contact, sexual contact or via contaminated swimming pools or objects. Transmission can also occur in eye care facilities such as ophthalmology clinics and eye hospitals. These settings have been implicated in outbreaks, as they are often where an infected patient will first present. Transmission to patients or staff occurs via hands, contaminated ophthalmic instruments, contaminated eyedrops, infected staff, or other contaminated objects. Adenovirus can live for long periods

of time in the environment (up to 49 days) and is resilient to many common germicides.

In March 2006 a public health unit in regional NSW was notified about 18 patients with conjunctivitis who had presented to a local eye clinic. All of these patients reported a visit to the clinic in the preceding two weeks.

In response, the public health unit and infection control staff visited the clinic and assessed the environment and infection control procedures. With identification of the outbreak the clinic had replaced 15 ml multi-dose eyedrop bottles with smaller volume vials and reduced their clinical caseload. In addition, the public health unit advised the clinic to: obtain laboratory confirmation of the diagnosis; notify the public health unit of further clinical cases; assist in a formal outbreak investigation; and implement additional infection control measures. These included: triaging patients with a 'red eye' to a separate examination room; routinely using gloves; avoiding tonometry unless required; disinfecting tonometer prisms with bleach solution after use on a patient with a 'red eye'; hand washing or the use of antiseptic hand gel between patients; and cleaning environmental surfaces as part of the routine cleaning schedule.

The outbreak investigation aimed to identify the extent of the outbreak in the region and identify risk factors for epidemic keratoconjunctivitis transmission. A case definition was developed and cases were ascertained from local general practitioners, local hospital emergency department records and clinic staff.

A total of 68 cases were identified. Fifty-six cases (82 per cent) reported a visit to the clinic in their incubation period. A case control study was conducted to investigate risk factors for epidemic keratoconjunctivitis transmission within the clinic. Preliminary analysis suggested that the outbreak was associated with anaesthetic drops, tonometry, dilating drops or optical coherence tomography.

In conclusion, while epidemic keratoconjunctivitis may have been circulating in the community, transmission was amplified in the clinic setting and was associated with instillation of eyedrops and tonometry. Prompt recognition and implementation of a range of infection control measures were required to control and halt this outbreak. ☒

\* Bug Breakfast is the name given to a monthly series of hour-long breakfast seminars on communicable diseases delivered by the NSW Department of Health's Division of Population Health.