Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

SARS virus in tears?

Testing tears for the presence of severe acute respiratory syndrome (SARS) coronavirus (CoV) could provide a simple way to diagnose or confirm the infection early, according to a new report. Using a reverse-transcription PCR (RT-PCR) technique, Seng Chee Loon (National University Hospital, Singapore) and colleagues tested tear samples from 36 consecutive patients with suspected SARS and detected the virus in three—all early in the course of the infection (*Br J Ophthalmol* 2004; **88:** 861–63). Tear samples were used to confirm SARS in one of the three patients, who was virus-positive only in her tears.

"The ability to detect and isolate the virus in the early phase of the disease may be an important diagnostic tool for the future, and tear sampling is both simple and easily repeatable", the authors say. "SARS CoV in tears could be a source of spread and a potential hazard to healthcare workers in close contact with the face and eyes of SARS patients", says co-author Stephen Teoh. Ophthalmic practices may need to change, he explains. "More stringent barrier methods, appropriate quarantine, and isolation measures are vital when managing patients with SARS."

By contrast, Denis Lam and colleagues at the Chinese University of Hong Kong had only negative results with RT-PCR in tears and conjunctival scrapings from 20 patients with probable or confirmed SARS (*Br J Ophthalmol* 2004; **88:** 968). Lam suggests the difference in results is probably because of the low sensitivity (approximately 50%) of the test and the brief presence of the viral particles. "The infectivity and clinical significance of tears containing SARS virus cannot be assessed until we have a large–scale study using a more sensitive test to determine both the frequency of viral presence and the viral load in tears."

Setting aside the discrepancy in the tears results, microbiologist Kennedy Shortridge, emeritus professor of Hong Kong University, warns that "better understanding of the pathogenesis of SARS Co-V and its transmission is important lest the virus reappears". Appropriate infection experiments in macaques "may be insightful".

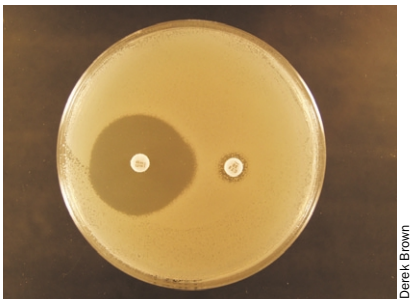
Dorothy Bonn

ESBLs: the next challenge in infection control

Extended-spectrum β-lactamases (ESBLs) are "starting to create serious problems", Professor Brian Duerden (Department of Health, London) told delegates at the ESBLs—UK perspective meeting (London, UK; June 30, 2004). ESBLs, a group of Gram-negative bacteria, produce enzymes that break down beta-lactam antibiotics, making them ineffective. In the UK, ESBL producing *Escherichia coli* are a rapidly developing problem, escalating in hospitals and emerging in the community.

These Gram-negative bacteria are typically bowel organisms passed-on directly or indirectly from person to person through faeces contaminants that enter the mouth. Although people often overcome ESBLs, those with compromised immune systems may not. Furthermore, mortality rates from ESBLs interfering with antibiotic treatment are unknown. Beta-lactamases first appeared in the 1960s after Ampicillin, the first broad-spectrum penicillin, was introduced. Cephalosporin antibiotics were developed to overcome these. However, many ESBLs are now resistant to cephalosporins. As worrying to scientists is the ability of ESBLs to spread from one bacterium to another via extra-chromosomal DNA.

In the UK, the main ESBLs, Cefotaximases, were detected in 2000, followed by the first hospital outbreaks in 2001–02. Then, last year ESBLs were detected in samples taken from patients in the community. Although initially found in *Klebsiella oxytoca* and *Klebsiella pneumoniae*, Neil Woodford



Derek Brown

ESBL–detection test on an E Coli sample

from the Health Protection Agency reported that there has been an increase in requests for ESBL confirmation in *E Coli*. Such requests have been from around 60 laboratories, and included samples taken within the community. Management of people who have an infection and an ESBL is becoming an issue. The types of antibiotics needed typically entail admission. And there is reluctance to admit those in the community for such treatment.

The strains of ESBLs remain difficult to isolate. Although epidemiology has been found to vary between hospitals, in one institution there were 16 different strains in 18 different cases. Such variation has made ESBLs difficult to detect. It is not known whether cases in the community are spilling over from hospitals, or whether the source of infection is multifocal—eg, from contaminated food.

A response to the threat of ESBLs in the hospital remains controversial. In the past, laboratory testing has driven the infection control response. Eleri Davies (University Hospital of Wales, Cardiff) argued that ESBL-specific infection control policies are not necessary. She believes that adherence to infection control guidelines together with local, relevant, timely, and robust surveillance involving clinicians are key. Prevention of any outbreaks would certainly be ideal. With ESBL detection problems and limited hospital isolation facilities, "search and destroy" and "screening" tactics seem destined to fail. The next meeting will be held on September 17, 2004.

Gillian Carmichael