

© 2013 by The Society for Healthcare Epidemiology of America. All rights reserved. 0899-823X/2013/3407-0020\$15.00. DOI: 10.1086/671075

## REFERENCES

1. Freeman JT, Anderson DJ, Sexton DJ. *Enterococcus* species and the central line-associated bloodstream infection surveillance definition: evaluating the importance of blood culture contamination. *Infect Control Hosp Epidemiol* 2013;34:762–763 (in this issue).
2. MacGregor RR, Beaty HN. Evaluation of positive blood cultures: guidelines for early differentiation of contaminated from valid positive cultures. *Arch Intern Med* 1972;130:84–87.
3. Steinberg JP, Robichaux C, Tejedor SC, Reyes MD, Jacob JT. Distribution of pathogens in central line-associated bloodstream infections among patients with and without neutropenia following chemotherapy: evidence for a proposed modification to the current surveillance definition. *Infect Control Hosp Epidemiol* 2013;34:171–175.

## Epidemic Keratoconjunctivitis Outbreak in a Closed Psychiatric Ward

*To the Editor*—Having read the article by Fukuta and Muder<sup>1</sup> on infectious outbreaks in psychiatric facilities, we would like to share our experience with an outbreak of epidemic keratoconjunctivitis (EKC) that occurred in a closed psychiatric ward of our hospital. The Department of Psychiatry is situated in a pavilion with 3 floors and 5 wards. The affected ward is a closed unit with 26 beds in 12 double rooms and 2 single rooms (each with its own bathroom), a nurses' station, a dining room, and a common room for group activities. At the point of notification, 22 beds were occupied.

The first notification of the outbreak reported 5 cases of adenoviral EKC. The index case was traced; symptoms in this patient started 13 days before the notification.

We recommended a set of outbreak control measures based on general and hand hygiene and on appropriate disinfection of surfaces (Table 1), and we organized workshops on hand hygiene for all staff. However, within 18 days of the notification the number of affected patients rose to 11, and 1 probable case was identified in a staff member. In light of such an increase in cases, we decided to restrict any further admissions and discharge as many patients as possible. When only 2 patients remained, an exhaustive cleaning of the whole ward was done. Usual activity was resumed the next day.

The epidemic curve was bimodal, with peaks in the first and third weeks of the outbreak. The last case of EKC was identified 34 days after the first notification and 47 days after the beginning of symptoms in the index case. Altogether, 13 cases of EKC were identified among patients of the closed unit. There were 2 suspected cases within this unit and 4 more in other units, none of which fulfilled the diagnostic criteria. The overall attack rate among patients was 22.4% (13/58). Of the 6 workers who developed some symptoms, only 2 were identified as cases (a nursing assistant and a cleaner). The attack rate among staff was 11.7% (2/17). No infection of patient visitors was noted.

EKC is a highly contagious disease and spreads very fast in hospital settings. The transmission probably occurred through direct person-to-person contact and use of common spaces. Implementation of preventive measures in a psychiatric ward is very difficult. The psychiatric pathologies of the patients that impeded strict adherence to hygiene rules, excessive physical activity, use of shared objects for group activities (eg, painting supplies), and especially direct physical contact all might have played a role in the spread of the disease. Patients could not be contained in their individual rooms, and preventing them from touching their itchy eyes was virtually impossible. Alcohol-based hand rub dispensers could not be installed because of the risk of ingestion, and

TABLE 1. Outbreak Control Measures

1. Intensification of hand hygiene in staff members
  - A. Distribution of individual bottles of alcohol-based hand sanitizer
  - B. Promotion of hand hygiene; use of gloves for eye care, and hand hygiene before and after the use of gloves
2. Improvement of patient hygiene
  - A. Promotion of hand hygiene
  - B. Removal of towels from bathrooms; use of disposable towels; removal of bath towels immediately after use
  - C. Daily change of clothes
  - D. Restriction of contact among patients as much as possible
3. Intensification of the cleaning measures
  - A. Use of quaternary ammonium-based cleaning products
  - B. Frequent cleaning in the zones of increased contact with hands: door handles, light switches, tables, etc
4. Individual rooms for patients with conjunctivitis or, if not possible, patient cohorting
5. Division of the common areas for separate use by patients with and without epidemic keratoconjunctivitis
6. Immediate notification of new cases to the Department of Preventive Medicine and Quality Management
7. Referral of any worker with suspicion of conjunctivitis to the Department of Occupational Health
8. Suspension of new admissions until the symptoms of affected patients disappear<sup>a</sup>
9. Closure of the ward for thorough cleaning<sup>a</sup>

<sup>a</sup> Measures 8 and 9 were taken during the second peak of the outbreak.

disinfection wipes were not distributed because of the risk of patients cutting themselves with the sharp edges of the packaging. In the end, the nursing staff had to supervise the individual use of alcohol-based hand rub.

The nature of the ward (closed unit) certainly facilitated an early diagnosis of the outbreak and also played a positive role in preventing spread to other wards. Faster detection of the outbreak compared with that in other studies<sup>2,3</sup> might have had an influence on the relatively fast resolution of the outbreak. Although new cases kept appearing after the adoption of control measures, this may be attributable to the long infectious and incubation period of EKC.

Preventive measures like hand hygiene and disinfection remain the mainstay of the management of EKC due to its high infectivity and lack of specific treatment. Although Gottsch et al<sup>4</sup> proposed EKC infection control guidelines for ophthalmology clinics, no guidelines have been developed for other healthcare facilities.

Nosocomial infection outbreaks carry important economic costs. Piednoir et al<sup>5</sup> estimated the cost of a nosocomial EKC case in a long-term care unit to €830 per patient; however, an increase in the length of hospital stay was not applicable in his case, so the real costs may be even higher. Closing a ward can be a very expensive infection control measure and should be applied with caution, as the cost of lost productivity is among the greatest expenses.

#### ACKNOWLEDGMENTS

*Potential conflicts of interest.* All authors report no conflicts of interest relevant to this article. All authors submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest, and the conflicts that the editors consider relevant to this article are disclosed here.

Vendula Nováková, MD, DDM, MPH, PhD;<sup>1</sup>

Mireia Cantero-Caballero, MD, MPH;<sup>1</sup>

Ana Clara Zoni, MD, MPH;<sup>1</sup>

Rosa Plá-Mestre, MD, MPH;<sup>1</sup>

María del Carmen Olmedo-Luceron, MD, MPH;<sup>1</sup>

Paz Rodríguez-Pérez, MD, MPH, PhD<sup>1</sup>

Affiliation: 1. Department of Preventive Medicine and Quality Management, Gregorio Marañón General University Hospital, Madrid, Spain.

Address correspondence to Vendula Nováková, MD, DDM, MPH, PhD, Department of Preventive Medicine and Quality Management, Gregorio Marañón General University Hospital, Calle Dr Esquerdo 46, 28007 Madrid, Spain (vendula.novakova@salud.madrid.org).

*Infect Control Hosp Epidemiol* 2013;34(7):764-765

© 2013 by The Society for Healthcare Epidemiology of America. All rights reserved. 0899-823X/2013/3407-0021\$15.00. DOI: 10.1086/671007

#### REFERENCES

1. Fukuta Y, Muder RR. Infections in psychiatric facilities, with an emphasis on outbreaks. *Infect Control Hosp Epidemiol* 2013;34(1): 80–88.
2. Asencio-Durán M, Romero-Martín R, García-Martínez JR, et al.

Nosocomial outbreak of epidemic keratoconjunctivitis in a neonatal intensive care unit [in Spanish]. *Arch Soc Esp Ophthalmol* 2007; 82:73–80.

3. Salcedo Miqueleiz MA, Goldaracena Tanco B, Ardanaz Aicua ME, Mazón Ramos A, Moreno Iribas C, Salvo Gonzalo S. A nosocomial and community outbreak of epidemic keratoconjunctivitis in Navarre, Spain, in 1996 [in Spanish]. *Rev Esp Salud Publica* 1997;71:383–390.
4. Gottsch JD, Froggatt JW III, Smith DM, et al. Prevention and control of epidemic keratoconjunctivitis in a teaching eye institute. *Ophthalmic Epidemiol* 1999;6:29–39.
5. Piednoir E, Bureau-Chalot F, Merle C, Gotzamanis A, Wuibout J, Bajolet O. Direct costs associated with a nosocomial outbreak of adenoviral conjunctivitis in a long-term care institution. *Am J Infect Control* 2002;30:407–410.

## Catheter-Related Bacteremia Caused by *Aeromonas hydrophila* in a Hemodialysis Patient

*To the Editor*—The central venous catheter is an essential device and is widely used in the treatment of complex medical conditions, such as hemodialysis, chemotherapy, and parenteral nutrition. *Aeromonas hydrophila* has become an increasingly important pathogen in humans.<sup>1</sup> We describe a case of catheter-related bacteremia (CRB) due to this pathogen in a hemodialysis patient.

An 81-year-old man with diabetic nephropathy presented with a complaint of dyspnea and declined urine output. His vital signs upon examination were as follows: blood pressure, 157/89 mm Hg; heart rate, 67 beats per minute; respiratory rate, 22 breaths per minute; and body temperature, 36.1°C. He had orthopnea, and mild edema of both lower extremities was noted. Laboratory tests disclosed a hemoglobin level of 7.2 g/dL and a serum creatinine level of 10.15 mg/dL. A nontunneled catheter was inserted in the right internal jugular vein for acute hemodialysis.

Sixteen days after catheterization, this patient developed fever and chills during dialysis (at 1 PM). The dialysis session was discontinued, and blood samples from the catheter and peripheral vein were obtained. At 3 PM, he was attacked by sudden onset of respiratory distress; at 10 PM, his blood pressure dropped to an alarmingly low level. The catheter was removed, and the distal part was cut off with sterile scissors and sent in aseptic condition for culture. At 3 AM, respiratory distress was aggravated, and a breathing machine was used; continuous renal replacement therapy (CRRT) was applied through a new catheter inserted in the right femoral vein.

Abnormal laboratory findings were as follows: white blood cell count, 1,300 cells/mm<sup>3</sup> (91% neutrophils); aspartate aminotransferase, 242 IU/L; alanine aminotransferase, 213 IU/L; and  $\gamma$ -glutamyl transpeptidase, 340.7 IU/L. Bedside chest X-ray and sputum and urine cultures showed unremarkable