Sepsis outbreak at L.A. County dialysis center prompts public health investigation

June 5 2012

Three patients with chronic kidney failure treated at a dialysis center in Los Angeles County, California contracted a bacterial infection in the blood (sepsis) caused by improper cleaning and disinfection of a reusable medical device called a dialyzer – an artificial kidney.

Described in a poster presented at the 39th Annual Educational Conference and International Meeting of the Association for Professionals in Infection Control and Epidemiology (APIC), the County of Los Angeles Department of Public Health, conducted an investigation led by public health nurse L'Tanya English, RN, MPH, who found that the bacteria infecting the three patients were genetically linked. These patients were infected with *Stenotrophomonas maltophilia* (*S. maltophilia*), a rare type of gram-negative bacteria.

Two of these patients were also positive for *Candida parapsilosis* (*C. parapsilosis*), a fungus that can cause sepsis in immune-compromised patients. One of these patients was positive for *C. parapsilosis* in the dialyzer only, and one patient was positive for *Candida* in the blood and in the dialyzer, which was genetically traced back to the same fungus in a faucet in the reprocessing room, where the dialyzers are disinfected and sanitized. The infections were reported to the health department in August 2011.

Two patients developed fevers and were hospitalized. One patient was assessed and treated as an outpatient; all patients later recovered.

The County of Los Angeles Department of Public Health became aware of the situation when a hospital in southern California reported an outbreak of sepsis tied to one dialysis center. During the course of their investigation, they discovered that all of the cases used the same type of dialyzer with a removable component – an O-ring header. These three patients were the only ones in the facility to use this type of dialyzer. In response to this outbreak, the facility decided to discontinue use of multi-use dialyzers with O-ring headers.

"Hemodialysis technology is life-saving, but carries a high risk of infection, regardless of the type of dialyzer used," said English. "Dialysis centers must work to reduce the risk of infection for their patients by ensuring proper cleaning and disinfection procedures are being followed throughout the facility. If multi-use dialyzers with removable headers and O-rings are used, processes to ensure proper disinfection must be in place."

The County of Los Angeles Department of Public Health is working with state and federal partners to conduct outreach to dialysis centers to decrease dialysis-associated infections and will discuss lessons learned from the investigation at the APIC Annual Conference.

"Contaminated O-rings have been previously implicated in dialysis-associated infection outbreaks. This report underscores the need for adequate infection prevention training in dialysis settings, as well as the critical partnership between public health departments and infection preventionists in hospitals and outpatient settings," said Michelle Farber, RN, CIC, APIC 2012 president. "Collaboration with public health is essential to pinpoint the cause of infection outbreaks and improve infection prevention practices across all healthcare settings."

Hemodialysis is a life-saving procedure that uses an artificial kidney, or dialyzer, to remove waste from the blood when the kidneys no longer

work. It is most often the treatment for end-stage renal disease. Following cardiovascular disease, infection is the second highest cause of death for hemodialysis patients.

The most recent draft of the U.S. Department of Health and Human Services' National Action Plan to Prevent Healthcare-associated Infections: Roadmap to Elimination includes a revised chapter on efforts to prevent and reduce healthcare-associated infections in end-stage renal disease patients.

In an effort to establish best practices for protecting patients undergoing hemodialysis, APIC published a Guide to the Elimination of Infections in Hemodialysis and has an archived webinar on dialysis event surveillance and reporting.

Provided by Association for Professionals in Infection Control