Intervention to Limit Transmission of Extremely Drug-Resistant Acinetobacter baumannii in Patients Who Underwent Surgery

TO THE EDITOR—Extremely drug-resistant (XDR) Acinetobacter baumannii is an opportunistic gram-negative pathogen with increasing relevance worldwide [1]. Although outbreaks of XDR A. baumannii have been reported in several settings around the world [2–4], infection control interventions to limit XDR A. baumannii transmission among patients undergoing surgical procedures have been rarely reported. We described an infection control intervention to limit the transmission of XDR A. baumannii transmission among postoperative patients.

An increased incidence of XDR A. baumannii among postoperative patients was detected at Thammasat University Hospital, Pathumthani, Thailand. Between 14 October 2010 and 20 December 2010, 24 patients had XDR A. baumannii isolated from clinical cultures within 48 hours after surgery (Figure 1). On 21 December 2010, the hospital epidemiologist was notified and an investigation was initiated. An initial investigation of the operating theater (OT) and general surgical units identified several lapses in infection control practices, including (1) lack of adequate communication among surgical and OT staff about known cases of XDR A. baumannii infection and/or colonization, (2) inadequate contact isolation for XDR A. baumannii infection and/or colonization cases, and (3) inadequate environmental cleaning, including improper cleaning in the OT (eg, lack of extra OT cleaning after operating on patients with XDR A. baumannii infection and/or colonization) and on the general surgical units. Although no point source was detected, cultures of several high-touch items in the OT (eg, monitor button, bed lever) and the general surgical units (eg, doorknob, bed rails, dressing carts) grew XDR A. baumannii.

Several infection control interventions were implemented, including (1) educating staff in both areas on proper hand hygiene and contact isolation; (2) creating a communication process between OT, general surgical unit, and infection prevention staff to identify colonized and/or infected patients; (3) limiting transfer of case patients within the same surgical unit; and (4) implementing intensified environmental cleaning of the OT and general surgical units. Monitoring of adherence

Figure 1. Incidence of extremely drug-resistant Acinetobacter baumannii occurring ≥48 hours after surgery.
to these interventions between 28 December 2011 and 30 April 2011 yielded 94% adherence to hand hygiene and contact isolation (235 of 250 observed opportunities), 96% (134/140) compliance with communications of known cases between the general surgical unit and OT staff, 80% (96/120) compliance with limiting transportation of known cases in same units, and 85% (212/250) compliance with the environmental cleaning protocol in both areas.

There were a total of 36 cases of XDR A. baumannii colonization and/or infections identified within 48 hours postsurgery between 14 October 2011 and 30 April 2012 (24 cases detected prior to intervention and 12 during the 4 months postintervention; Figure 1). Six patients (6/36; 16%) died as a result of XDR A. baumannii surgical site infections. After the interventions, the incidence of XDR A. baumannii colonization and/or infections after surgery gradually declined (Figure 1). The last case was detected on 30 April 2012. Surveillance of XDR A. baumannii colonization and/or infection cases occurring ≥48 hours after surgery was continued (Figure 1) and detected no additional cases as of 30 May 2013.

We described the prolonged outbreak of XDR A. baumannii among postoperative patients as a result of delayed detection and notifications. Given the complexity of XDR A. baumannii epidemiology, control of outbreaks due to this bacteria may take a prolonged period to achieve [2, 5]. Thus, identification of potential environmental reservoirs, adherence to infection control interventions, and appropriate administrative support are required. Our investigation suggested that staff education and communication between OT and general surgical unit personnel, together with intensified environmental cleaning, were keys to terminating this prolonged outbreak. A single case of XDR A. baumannii in a postoperative patient can cause a prolonged, unrecognized outbreak, and a prompt outbreak investigation should be initiated. Postoperative surveillance and prompt investigation of XDR A. baumannii infection and/or colonization are critical to terminate outbreaks in postoperative patients.

Notes

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