POSTER ABSTRACTS

357. Epidemiology of Carbapenem-Resistant Gram-Negative Bacilli in Georgia, Minnesota, and Oregon – 2012

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Background. Carbapenem-resistant Enterobacteriaceae (CRE) and carbapenem-resistant *Acinetobacter* (CRAB) are increasingly reported in the United States and cause infections with high mortality. We initiated a laboratory and population-based surveillance program to describe the epidemiology of CRE and CRAB.

Methods. We defined CRE as *Escherichia coli*, *Enterobacter* spp, or *Klebsiella* spp nonsusceptible to ≥1 carbapenem (excluding ertapenem) and resistant to all 3rd generation cephalosporins tested, and CRAB as *A. baumannii* nonsusceptible to ≥1 carbapenem (excluding ertapenem). CRE and CRAB isolates from sterile sites or urine collected in residents of 3 metropolitan areas in GA, MN, and OR in 2012 were included. Rates were based on 2012 census data. We reviewed patient charts and classified isolates as hospital-onset (HO) (collected >3 days after admission); healthcare-associated, community-onset (HACO) (collected ≤3 days after admission with hospitalization, dialysis, long-term care residence, or surgery in the prior year or with an indwelling device at time of culture); or community-associated (CA) (collected ≤3 days after admission and lacking the above healthcare exposures). Polymerase chain reaction was used to test available CRE for selected carbapenemases.

Results. Of 327 isolates, 213 were CRE (169 patients), 114 were CRAB (100 patients). Most CRE (88%) and CRAB (73%) were from urine; 9% and 25% were from blood respectively. CRE and CRAB incidence (per 100,000 population) was significantly lower in OR (CRE: 0.35, CRAB: 0) and MN (CRE: 1.88, CRAB: 0.12), compared to GA (CRE: 4.58, CRAB: 2.93). Most CRE (72%) and CRAB (62%) isolates were classified as HACO; of these, 49% of CRE and 66% of CRAB were from patients recently in long-term care settings. *K. pneumoniae* carbapenemase was detected in 51% of CRE (*K. pneumoniae* [19/23; 83%], *E. coli* [1/8; 13%], *E. cloacae* [6/9; 67%], *E. aerogenes* [1/13; 8%]); no other carbapenemases were detected.

Conclusion. Most CRE and all CRAB were detected in patients with healthcare exposures. CRE and CRAB incidence varied substantially across surveillance sites. Many CRE meeting our definition do not harbor carbapenemases; whether these organisms pose the same threat as carbapenemase-producing CRE is not known.

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