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Abstract (oral session)

Effectiveness of a country-wide infection control programme targeting carbapenem-resistant Gram-negative pathogens: experience from a tertiary care hospital in Greece

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Objectives: We sought to evaluate the effectiveness of an infection control program targeting carbapenem-resistant (CR) Gram-negative pathogens in a tertiary care hospital in Greece. Methods: In November 2010, the "Prokroustis" infection control program targeting infections with class A (KPC) and/or MBL-producing Klebsiella pneumoniae and CR Pseudomonas aeruginosa or Acinetobacter baumannii was implemented in public hospitals in Greece. Briefly, the infection control team was notified daily for every positive culture. Infection versus colonization was differentiated according to pre-specified criteria. A bundle of infection control measures, including promotion of hand hygiene and of contact precautions, isolation or cohorting of the case-patients, and appointment of dedicated personnel was reinforced. The type of carbapenemase for K. pneumoniae isolates was evaluated phenotypically using combined disc tests (meropenem without and with 0.1 M EDTA, phenyl boronic acid, or both inhibitors). We report the implementation of the program in Tzaneio General Hospital, Piraeus, a 450-bed general hosital, during its first year (2010-2011) and compare the incidence of CR infections during the first and the second half of the study period. Results: From Oct 1, 2010 - Oct 30, 2011, 70 patients were identified as having an infection with any of the targeted CR Gram-negative pathogens. Of these infections, 52 (74.3%) occurred in patients hospitalized in the ICU. Seventy-four CR Gram-negative pathogens were identified: 20 (27.0%) A. baumannii, 13 (17.6%) P. aeruginosa, and 41 (55.4%) K. pneumoniae; 38 (92.7%) of the latter pathogens were KPC carbapenemase-producers. The incidence of infection with any of the studied pathogens was lower in the second compared with the first half of the study period for all hospitalized patients (5.0 versus 9.5 infections per 10,000 patient-days, p=0.01) and for ICU patients (8.3 versus 18.6 per 1,000 patient-days, p=0.007); the difference in the incidence of infections with specifically KPC-producing K. pneumoniae was not statistically significant (3.0 versus 4.8 infections per 10,000 patient-days, p=0.16). Conclusion: These findings show that the implementation of an infection control program can reduce the incidence of infections with CR Gram-negative pathogens in our tertiary care facilities; more efforts need to be made for containing the incidence of infections with KPC-producing K. pneumoniae, which is endemic in our region.