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Poster Session II

Surveillance of healthcare-associated infections

EPIDEMIOLOGY OF CARBAPENEMASE-PRODUCING *KLEBSIELLA PNEUMONIAE* IN A NORTH-WEST ITALIAN REGION: REPORT FROM THE REGIONAL SURVEILLANCE SYSTEM

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Objective. The spread of carbapenemase-producing *Klebsiella pneumoniae* (KPC) has become a worldwide problem in recent years with a reported fatality rate from 22% to 72%. In Europe, outbreaks of KPC have been reported in several countries, but data from the EARS-NET surveillance system showed that, until 2009, the proportion of KPC has remained stable in most countries except Greece and Italy where a rapid increase of KPC has been reported since 2010.

In Italy the first report of KPC was described in 2000, but the incidence of this infection increased from 1-2% in 2006-2009 to 15.2% in 2010 and 27% in 2011.

Methods. We report results from the 2012 regional surveillance program for KPC in Piedmont, North West of Italy, within the national and the EARS-NET surveillance systems. This study involved 28 regional Public Health Infection Control Units covering all the area (4,374,000 inhabitants) whose mandatory task on a year-base was to report *Klebsiella pneumoniae* and KPC clinical isolates from any site of infection in order to investigate KPC epidemiology in Piedmont. For each isolate, site of sampling and ward were recorded.

Results. During the year 2012, 8,179 *Klebsiella pneumoniae* strains were reported, 17.5% of them were KPC. The incidence of KPC was 1.9/1,000 patients admitted to hospital and KPC was more frequently isolated in tertiary care referral hospitals. The majority of KPC were isolated from urine (50%), followed by respiratory samples (22%), blood (12%) and other sites (11%). Concerning the in-hospital distribution, 31% of KPC were identified in patients admitted to medical ward (56% of samples were urinary) followed by intensive care unit (ICU) in 15% (56% from respiratory samples), 13% from surgical ward and 14% from emergency department. Out of KPC-positive samples from blood cultures, 16% were isolated in both patients admitted to medical ward and in ICU patients. Sensitivity to colistin, tigecycline and gentamycin (EUCAST breakpoints) was 74%, 57% and 55%, respectively, in KPC isolated from tertiary care centers. However, only 43% of laboratory tested tigecycline, whilst 71% tested colistin.

Conclusion. The epidemics of KPC infections challenge the health system for infection control and prevention procedures. The incidence of KPC per 1,000 patients admitted to the hospital was lower in 2012 compared to 2011 (3/1,000); KPC seemed to affect more medical wards than ICUs, for several reasons: the higher number of urinary colonization in medical wards vs. more respiratory colonization in ICUs. Moreover, KPC diffusion was no longer restricted to major hospitals but also challenged tertiary care hospitals which need to be considered when planning infection control strategies. Encouraging results of the 2012 survey confirm the presence of a decreasing trend in KPC spread at local level due to the implementation of infection control measures.