

R2648

Abstract (publication only)

Spread of carbapenemase-producing Enterobacteriaceae: what is changing?

M.M. Cordovana* (Bologna, IT)

SPREAD OF CARBAPENEMASE-PRODUCING ENTEROBACTERIACEAE: WHAT IS CHANGING?

Cordovana M.; Ambretti S.; Berlingeri A.; Gaibani P.; Tamburini M.; Sambri V; Landini M. U.O.

Microbiologia, Azienda Ospedaliero-Universitaria di Bologna, Policlinico S.Orsola-Malpighi (Italy) Objectives:

In the last years, the spread of enterobacteria with reduced susceptibility to carbapenems has been observed worldwide. From 2010 an increasing number of isolation of KPC-producing strains of Enterobacteriaceae has been observed in S.Orsola-Malpighi Hospital (Bologna, Italy). The aim of this study was to analyse the spread of different carbapenemase-producing strains of enterobacteria, and to evaluate how the trend of diffusion changed during the period of study, considering number of isolates, typology of resistance mechanism and distribution of MIC value for meropenem. Methods: From March 2010 all clinical isolates of Enterobacteriaceae that showed reduced susceptibility to one of the carbapenems tested in routine were subjected to phenotypic confirmation test(modified hodge test and disk diffusion synergy test). Month by month, we recorded the data about the distribution of the strains possessing different resistance mechanism and their meropenem MIC values. Results: Of the 1399 strains collected, 949 resulted KPC-producer, 58 MBL-producer, 10 AmpC-producer, and 228 resulted negative to phenotypic confirmation test. Considering KPC-producing strains, the percentage of strains with MIC value for meropenem ≥ 16 was low in 2010 (about 30%), but it constantly raised up to 60% and 99% respectively in 2011 and 2012. The MBL-producing strains show great variability in MIC values for meropenem, depending on the species, while the other strains showed MIC values for meropenem often in the EUCAST "susceptible" range. Conclusions: The number of isolation of KPC-producing strains increased very rapidly from 2010 in our hospital; an increasing heterogeneity of the distribution of the different carbapenemases has been observed, with MBL-producers strains always more represented, although KPC-producers remain prevalent. The MIC values for meropenem are variable for MBL-producers, but the most concerning data is the enhancement of MIC value for meropenem of KPC-producing strains, that now are almost fully resistant to meropenem (MIC >32). The change in the epidemiological trend of diffusion of KPC-producers demonstrates that strict control measures could be helpful to contain the spread of carbapenemase-producing bacteria.