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Abstract (poster session)

In vitro activity of isepamicin against 6296 Enterobacteriaceae isolates collected at a tertiary-care general hospital in Greece

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Objective: Although antimicrobial resistance in Enterobacteriaceae is increasing, few novel antibiotics against these pathogens have been developed. In the meantime, the reevaluation of older antibiotics may identify new therapeutic options. We sought to investigate the role of isepamicin in this regard. Methods: We retrospectively evaluated the in vitro antimicrobial susceptibility to isepamicin and other clinically relevant antibiotics of unique-patient Enterobacteriaceae isolates, which were collected at the microbiological laboratory of the University Hospital of Heraklion, Crete, Greece, between 2004 and 2009. Susceptibility testing was done with the automated Vitek 2 system. The breakpoints for susceptibility to isepamicin were those proposed by the Comité de l'antibiogramme de la Société Française de Microbiologie. The Clinical and Laboratory Standards Institute breakpoints were used for all other antibiotics tested. Results: A total of 6296 isolates were studied, including primarily 3401 (54.0%) *Escherichia coli*, 1040 (16.5%) *Klebsiella pneumoniae*, 590 (9.4%) *Proteus mirabilis* and 460 (7.3%) *Enterobacter* spp. isolates. The most frequent culture specimens were urine (57.3%), pus (13.8%), lower respiratory tract specimens (5.4%), and blood (5.3%). Outpatients constituted 33.1% and patients hospitalized in intensive care units constituted 7.8% of the 6296 source patients. Isepamicin was the most active of the antibiotics tested against all isolates: 6103 (96.9%) of the 6296 isolates were susceptible to isepamicin, followed by meropenem (5890, 93.6%), imipenem (5874, 93.3%), amikacin (5492, 87.2%), gentamicin (5444, 86.5%) and cefepime (5422, 86.1%). Susceptibility rates for the 1040 *K. pneumoniae* isolates were highest for isepamicin (95.3%), followed by colistin (89.3%) and meropenem (63%). Regarding *K. pneumoniae* isolates with resistance to other antibiotics, 91% of the 392 carbapenem-resistant isolates, 88% of the 375 isolates that were non-susceptible to all other aminoglycosides and 86% of the 111 colistin-resistant isolates remained susceptible to isepamicin. Conclusion: Isepamicin exhibited high in vitro activity against almost all of the major Enterobacteriaceae species. It could be a therapeutic option against carbapenem-resistant, KPC-producing *K. pneumoniae* that is endemic in our region, as it does not show considerable cross-resistance with other aminoglycosides or with colistin.