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Abstract (poster session)

Emergence of linezolide-resistant Staphylococcus epidermidis in Portugal: description of the first cases

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Objectives: Linezolid is often a critical treatment option for infections associated with multidrug resistant (MDR) Gram-positive species worldwide. Lin resistant (LinR) Gram positive species, namely S. epidermidis, have been described in different countries. Resistance is often associated with mutations in 23s rRNA targets or ribosomal proteins and, in few cases, with the plasmid located cfr gene. We aimed to characterize the resistance mechanism of the first isolates of LinR S. epidermidis emerging in Portugal. Methods: In May 2012 a LinR S. epidermidis was isolated from catheter of a Portuguese male patient (75 years old; gastric neoplasy; surgery unit) and a second case was only detected in October (78 year old female; several pathologies; catheter; medicine I). Treatment with Lin was done in both cases before the isolation of LinR S. epidermidis. In November, 2 more LinR isolates were detected in hemocultures of 2 male patients (78-87 years; one with several pathologies and other with an acute lung edema) in the emergency unit. These patients had been previously admitted in Medicine II the month before and treatment with Lin was done during their stay. The 4 S. epidermidis isolates were identified in Vitek II system. Susceptibility to Lin, vancomycin and tiamulin was determined by agar dilution and to other 11 antibiotics by disk diffusion (CLSI). The search of cfr gene and mutations in the 23S rRNA V domain were done by PCR and sequencing. Results: The 4 S. epidermidis presented the same antibiotic resistant profile. Resistance to Lin (MIC>32mg/L), tiamulin (MIC>16mg/L), penicillin, cefoxitin, chloramphenicol, gentamicin, tobramycin, clotrimoxazol, ciprofloxacin and clindamycin was detected. All isolates were susceptible to vancomycin (MIC=2mg/L), erythromycin, tetracycline and quinupristin-dalfopristin. None of the S. epidermidis carried cfr gene. LinR were associated with the previous described mutations in the V domain of 23S rRNA T2504A, G2631T and T2530A. Conclusions: This is the first description of LinR in Staphylococcus spp in Portugal, emerged after therapy with this antibiotic. Resistance to tiamulin suggest that beside 23S rRNA targets, other genes codifying for ribosomal proteins could also be mutated. Measures to control the spread of these strains are critical to maintain the efficacy of Lin to the treatment of MDR Staphylococcus in our country.