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P1105 Epidemic dissemination of a carbapenem-resistant Acinetobacter baumannii clone carrying armA

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Background: The aim of the present study was to analyse the prevalence of 16S rRNA-methylase-genes (RMTs) among consecutively collected *A. baumannii* isolates, in Athens Metropolitan area, their carbapenemase gene content, the genetic relatedness and the evolution of clonal lineages among RMT-producing isolates recovered from Greek patients during 2015-2016.

Materials/methods: Single-patient *A. baumannii* clinical isolates, resistant to amikacin, gentamicin and tobramycin (n=346), were consecutively collected during a two-year period (2015- 2016) in five tertiary-care hospitals in Athens. All isolates were sent to a central laboratory for MIC determination to the 4,6-disubstituted aminoglycosides amikacin, gentamicin and tobramycin, as well as to apramycin and neomycin with the broth dilution technique. Isolates with MICs ≥256 mg/L to 4,6-disubstituted aminoglycosides were examined for the presence of 16S rRNA methylase (RMT) genes (*armA, rmtB, rmtC, rmtA, rmtD* and *npmA*) by two multiplex PCRs. Carbapenemase production was confirmed by multiplex PCR in all RMT-positive isolates. A PCR-based method proposed by Turton et al, 2007, was used to assign the sequence groups and the corresponding major international clones.

Results: *A. baumannii*, resistant to amikacin, gentamicin and tobramycin were isolated at participating institutions at a rate of 67.8% (calculated in the 1st Semester of 2016). Three hundred and twenty-four *A. baumannii* isolates of 346 tested (93.6 %), were positive for *armA*. The vast majority of *armA*-bearing *A. baumannii* strains were OXA-23 producers (98.5%) while four isolates (all from the same hospital) were OXA-24 producers (1.2%), and only one isolate was OXA-58-producer. The *armA* bearing *A. baumannii* isolates that produced the OXA-23 carbapenemase were assigned mainly (99.4%) to sequence group G1 corresponding to international clone IC2, while those producing the OXA-24 to G6 corresponding to CC78. The unique *armA*- harbouring isolate that produced OXA-58 was assigned to G2 corresponding to IC1.

Conclusions: RMT production is an emerging mechanism of resistance, capable to compromise the clinical efficacy of aminoglycosides. High prevalence of *armA* was observed among *A. baumannii* strains isolated in participating hospitals in Athens. *ArmA*-positive isolates were mainly OXA-23 producers belonging to IC2.