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Abstract (poster session)

**Clonal outbreak of carbapenem- non-susceptible *Acinetobacter baumannii* in a Croatian hospital**

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**Objectives:** The aim of the study was to characterize the mechanism of reduced susceptibility to carbapenems in *A. baumannii*. **Methods:** Sixty nine *A. baumannii* isolates were collected in last three months of 2009. in the hospital in Pula, Croatia. The antimicrobial susceptibility to a wide range of antibiotics was determined by broth microdilution according to CLSI guidelines. E-test MBL strips were used for detection of metallo-carbapenemases following the manufacturer's instructions. PCR was used to detect the presence of the genes encoding the MBLs of IMP, VIM and SIM series and, blaOXA (blaOXA-51, blaOXA-23, blaOXA-40, blaOXA-58 and blaOXA-143) genes as previously described. The genetic context of blaOXA-51 genes was determined by PCR mapping with the primers for ISAbal combined with forward and reverse primers for blaOXA-51. Sequence groups (1-3) corresponding to EU clones I-III were determined by multiplex PCR. Genetic relatedness of the isolates was investigated by PFGE. The presence of genes encoding CarO porin was investigated by PCR. **Results:** More than 90% of the strains were resistant to cefotaxime, ceftriaxone, piperacillin, piperacillin/tazobactam, ciprofloxacin and gentamicin. The strains showed variable degrees of susceptibility/resistance to imipenem and meropenem. Most strains were intermediate susceptible to both carbapenems with MICs around 8 mg/L. All strains were susceptible to colistin. Colistin was the most potent antibiotic with MIC<sub>90</sub> of 2 mg/L. Acquired oxacillinases were not found. Isolates were positive only for naturally occurring OXA-51 beta-lactamase which was associated with ISAbal insertion sequence located upstream of blaOXA-51. No MBLs were found. Chromosomal AmpC beta-lactamases did not affect the susceptibility to carbapenems. Sodium chloride did not decrease carbapenem MICs. MICs of meropenem were not significantly reduced by CCCP (proton-gradient pump inhibitor). The strains were found to belong to EU clone I (sequence group 2). PFGE confirmed the clonality of the isolates. All strains were found to possess gene encoding CarO porin. **Conclusions:** This study demonstrated clonal outbreak of multiresistant *A. baumannii* in Pula county hospital. The presence of ISAbal insertion sequence is thought to upregulate the expression of blaOXA-51 gene and therefore may be responsible for elevated carbapenem MICs. In conclusion, this study highlights the need to establish an antimicrobial surveillance network for *A. baumannii*.