

P1591

Abstract (poster session)

Effect of the combination colistin/vancomycin in colistin-resistant *Acinetobacter baumannii* strains

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Objectives: Recently, it was described the synergy activity between colistin and vancomycin in clinical strains of *Acinetobacter baumannii*. The main objective of this work was to evaluate the synergy between colistin and vancomycin in colistin-resistant *A.baumannii* strains. **Methods:** 6 clinical *A.baumannii* (2 colistin susceptible and 4 colistin resistant strains) were selected to study the colistin/vancomycin synergy. MIC of vancomycin and colistin was performed by microdilution method. Synergy was studied by 3 different methodologies. 1) Double E-test Strip (Superimposing the two E-test strips of colistin and vancomycin), 2) E-test of Vancomycin in plates supplemented with different concentrations of colistin (from 0.25 mg/L to 16 mg/L) and 3) Checkerboard assays. Checkerboards were performed with doubling dilutions of vancomycin (0.06 mg/L to 128 mg/L) in the horizontal wells and colistin sulfate (128 to 1 mg/L for colistin resistant strains, and 0.06 mg/L to 8 mg/L for susceptible strains) in the vertical wells. Two methods were used to define synergy, FICI (fractional inhibitory concentration index) and SBPI (susceptibility breakpoint index) All the experiments were performed twice in two different days. **Results:** Synergy studies showed potent synergy between colistin and vancomycin. Checkerboard studies analyzed by the lowest- FICI method revealed synergy when vancomycin was combined with colistin, values ranged from 0.5 to 0.09. In other hand, SBP indices for susceptible isolates ranged from 6 to 18, suggesting that the combination reduced the MIC to less than the susceptibility breakpoint, but SBPI indices for resistant isolates were 0.25 suggesting that the combination are not able to reduce the MIC to less than the susceptibility breakpoint. Similar results were obtained, when Muller Hinton agar plates supplemented with colistin and E-test of Vancomycin were used. **Conclusion:** The in vitro combination of colistin and vancomycin showed a potent synergy in both, colistin-susceptible and colistin-resistant strain of *A.baumannii*. SPBI index show that the combination are not able to reduce the MIC to less than the susceptibility breakpoint. This results encourage to investigate this combination with colistin derived and vancomycin derived drugs in order to find new combination between molecules of these groups that could be able to reduce the MIC to less than the susceptibility breakpoint.