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O0841 A rapid susceptibility test for dalbavancin against *Staphylococcus aureus*

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Background: Dalbavancin is a novel second-generation lipoglycopeptide antibiotic. It has strong activity against many Gram-positive bacteria, including methicillin-sensitive and methicillin-resistant *Staphylococcus aureus*. Based on MIC data and other studies, dalbavancin is bactericidal and more potent than vancomycin against these organisms, therefore requires lower concentrations.

Materials/methods: Six strains of S. aureus, 3 MRSA and 3 MSSA were used to optimize the protocol. Suspension of 0.5 MacFarland from pure cultures was prepared, diluted and incubated for 1 h with breakpoint concentration of dalbavancin (1 ug/ml), together with one fluorescent probe. Three different fluorescent probes were studied: one for permeability of the membrane, other for membrane potential and other for metabolic status evaluation. Flow cytometric analysis was performed in Cytoflex from Beckman Coulter and side and forward scatter, number of cells and intensity of fluorescence determined and compared with the control (non-treated cells). The same strains were inoculated on blood cultures (BD) spiked with blood donor and incubated until flagged positive. The cells were extracted with an optimized protocol, exposed to dalbavancin and the optimized probe for 1 h and analyzed by flow cytometry.

Results: The probe that indicates damage on the membrane did not reveal differences between treated and non-treated cells after 1 h treatment; both, membrane potential and metabolic probes showed an increase of the intensity of fluorescence on treated cells, although the differences were higher with the membrane potential probe. A reduction of the number of the cells on the gate and/or an increase on the intensity of fluorescence was evident comparing to control in all tested strains. Similar results were obtained with the positive blood cultures.

Conclusions: A quick susceptibility test was developed to evaluate the effect of dalbavancin that could be used from pure colonies, saving almost 1 day or, directly from positive blood cultures, saving almost 2 days.