27th ECCMID Vienna, Austria 22 – 25 April 2017
The congress of ESCMID

Session: P074 Epidemiology and in vitro susceptibility of coagulase-negative staphylococci

Category: 3a. Resistance surveillance & epidemiology: MRSA, VRE & other Gram-positives

24 April 2017, 13:30 - 14:30
P1500

Activity of dalbavancin tested against teicoplanin-resistant coagulase-negative staphylococci

Emilia Cercenado*[1], Mercedes Marín[2], David Ampuero[2], Ana Alvarez-Uria[3], Emilio Bouza Santiago[4]

[1]*Hospital General Universitario Gregorio Maranon; Microbiology*

[2]*Hospital General Universitario Gregorio Marañón; Clinical Microbiology and Infectious Diseases*

[3]*Hospital General Gregorio Marañon*

[4]*Hospital General Universitario Gregorio Marañon, Insituto de Investigación Sanitaria Gregorio Marañón; Clinical Microbiology and Infectious Diseases*

Background: Dalbavancin (DAL) is a lipoglycopeptide antibiotic with activity against Gram-positive microorganisms. Many studies have tested the activity of DAL against coagulase-negative staphylococci (CoNS), however, data concerning its activity against CoNS isolates showing resistance to teicoplanin are very scarce. We evaluate the *in vitro* activity of DAL against a series of teicoplanin-resistant CoNS including isolates recently collected from patients in our institution and from a well characterized collection of teicoplanin-resistant isolates.
Material/methods: A total of 50 teicoplanin-resistant CoNS isolates (teicoplanin MIC > 4 mg/L) were studied: 30 of them were recovered prospectively from patients at our hospital from April to October 2016, and the remaining 20 belonged to our laboratory collection of teicoplanin-resistant CoNS recovered in our laboratory over the last 4 years. All isolates were first tested using the MicroScan PosCombo panel 37 (Beckman-Coulter, USA). In addition, teicoplanin and DAL susceptibility testing was performed by the gradient diffusion method (epsilon test, Liofilchem, Italy). EUCAST breakpoints were applied for DAL (susceptible ≤0.125 mg/L; resistant >0.125 mg/L). *S. aureus* ATCC 29213 and *E. faecalis* ATCC 29212 were used as control strains.
Results: Among the isolates, 34 were *Staphylococcus epidermidis*, 13 *Staphylococcus haemolyticus*, and 3 *Staphylococcus hominis*. The isolates were recovered from blood (significant bacteremia; n=18), intravascular catheter (n=16), wound/abscess (n=12), and others (n=4). Forty-six isolates were methicillin-resistant (MR) and 4 were methicillin-susceptible (all *S. epidermidis*).

The teicoplanin MICs against the isolates were: 8 mg/L (25 isolates); 12 mg/L (9 isolates); 16 mg/L (13 isolates); 24 mg/L (1 isolate); and 48 mg/L (2 isolates). DAL inhibited 78% of isolates at an MIC of ≤0.125 mg/L. All isolates showing a teicoplanin MIC of 8 mg/L were susceptible to DAL, as well as 66.6% of isolates with a teicoplanin MIC of 12 mg/L, and 61.5% of isolates with teicoplanin MIC of 16 mg/L. All isolates with teicoplanin MICs >16 mg/L were resistant to DAL.
DAL MIC50, MIC90, and range for all isolates tested were 0.094, 0.25, and 0.047-0.75 mg/L, respectively. The activity of DAL in comparison with teicoplanin is shown in the table.
Conclusions: In this study dalbavancin demonstrated greater potency than teicoplanin, being active against all teicoplanin-resistant CoNS isolates with an MIC of 8 mg/L. Dalbavancin showed low activity against isolates with teicoplanin MICs >8 mg/L.

No. Isolates with:	**Dalbavancin MIC50 (mg/L)**	**Dalbavancin MIC90 (mg/L)**	**Dalbavancin Range (mg/L)**
Teicoplanin MIC 8 mg/L (n=25)	0.094	0.12	0.047-0.12
Teicoplanin MIC 12 mg/L (n=9)	0.12	0.25	0.094-0.38
Teicoplanin MIC 16 mg/L (n=13)	0.12	0.25	0.064-0.25
Teicoplanin MIC 24 mg/L (n=1)	-	-	0.19
Teicoplanin MIC 48 mg/L (n=2)	-	-	0.38-0.75