28th ECCMID EUROPEAN CONGRESS OF CLINICAL MICROBIOLOGY AND INFECTIOUS DISEASES
Madrid, Spain
21 – 24 April 2018

P1829 In vitro activity of omadacycline against resistant Staphylococcus aureus

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Background: Omadacycline is the first aminomethylcycline in late stage clinical development for acute bacterial skin and skin structure infection (ABSSSI) as once-daily oral and IV formulations. *In vitro* bacterial activities against a collection of resistant *S. aureus* were investigated.
Materials/methods: The *in vitro* activity of **omadacycline** (**OMC**) was compared with that of doxycycline (DO), tigecycline (TI), linezolid (LI), ceftaroline (CE), levofloxacin (LE), moxifloxacin (MO), telithromycin (TE), azithromycin (AZ) and erythromycin (ER) against a total of 239 resistant *S. aureus*, by microdilution procedures (CLSI, M7-A12, M100-S25). The tested strains included *S. aureus* that were methicillin-resistant (*mec*A (150)), macrolide-resistant (*erm*A, B or C (50)) and ciprofloxacin-resistant (*gyr*A and *par*C (39)).
Results: Against methicillin-resistant (*mec*A genotype) *S. aureus*, the MIC of **OMC** ranged from 0.016 to 0.25 mg/L and **OMC** (MIC_{90} 0.25 mg/L) and TE (MIC_{90} 0.12 mg/L) were more active than TI (MIC_{90} 0.5 mg/L), DO (MIC_{90} 1 mg/L), CE (MIC_{90} 1 mg/L), LI (MIC_{90} 2 mg/L), MO (MIC_{90} 4 mg/L), LE (MIC_{90} ≥16 mg/L), AZ (MIC_{90} ≥16 mg/L) and ER (MIC_{90} ≥16 mg/L). **OMC** (MIC_{90} 0.25 mg/L) showed higher activity than TI (MIC_{90} 0.5 mg/L), DO (MIC_{90} 1 mg/L), CE (MIC_{90} 1 mg/L), LI (MIC_{90} 2 mg/L), MO (MIC_{90} 4 mg/L), LE (MIC_{90} 4 mg/L), TE (MIC_{90} 4 mg/L), AZ (MIC_{90} ≥16 mg/L) and ER (MIC_{90} ≥16 mg/L) against macrolide-resistant (*erm*A, B, C genotype) *S. aureus*. Against ciprofloxacin-resistant (*gyr*A and *parC* genotype) *S. aureus*, the MIC of **OMC** ranged from 0.06 to 0.25 mg/L and AZ (MIC_{90} ≥16 mg/L), ER (MIC_{90} ≥16 mg/L), LE (MIC_{90} ≥16 mg/L), LI (MIC_{90} 4 mg/L), CE (MIC_{90} 1 mg/L) and DO (MIC_{90} 1 mg/L) were less active than **OMC** (MIC_{90} 0.25 mg/L), TE (MIC_{90} 0.25 mg/L) and TI (MIC_{90} 0.5 mg/L).
Conclusions: The results of this study suggest that **OMC** may have use in infections caused by resistant *S. aureus* and highlights the potential utility of this oral and IV agent for the treatment of ABSSSI.