29th ECCMID Amsterdam, Netherlands 13 – 16 April 2019

The congress of ESCMID

P1852 Cefiderocol *in vitro* activity against Gram-negative clinical isolates collected in Europe: result from three SIDERO-WT surveillance studies between 2014-2017

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Background: The emergence and dissemination of potent resistance mechanisms among Gram-negative species underscores the need for the development of new and effective therapeutic choices to treat the infections caused by these challenging organisms. Cefiderocol (CFDC) is a novel parenteral siderophore cephalosporin with potent activity against a wide variety of Gram-negative pathogens including carbapenem-resistant strains. This study evaluated the *in vitro* activity of CFDC and comparator agents against resistant clinical isolates collected in 2014-2017 from Europe based on the information on the site of infection and geography.

Materials/methods: A total of 10,551 Enterobacteriaceae, 2,126 *Acinetobacter spp*., 2,767 *Pseudomonas aeruginosa*, 627 *Stenotrophomonas maltophilia*, and 81 *Burkholderia cepacia* complex collected from 11 European countries in 2014 - 2017 were tested. MICs were determined for CFDC, cefepime (FEP), ceftazidime-avibactam (CZA), ceftolozane-tazobactam (C/T), ciprofloxacin (CIP), colistin (CST), and meropenem (MEM) by broth microdilution according to CLSI guidelines. As recommended by CLSI, CFDC was tested in iron-depleted cation-adjusted Mueller Hinton broth. Carbapenem non-susceptible (CarbNS) strain of all bacterial species was defined as meropenem MIC ≥ 4 mg/L. Quality control testing was performed on each day of testing.

Results: CFDC exhibited potent *in vitro* activity against a total of 16,154 strains of Gram-negative bacteria with MIC90 of 1 mg/L. As shown in the following table, MIC90 of CFDC against Enterobacteriaceae, *P. aeruginosa*, *A. baumannii*, and *S. maltophilia* were ≤1 mg/L. Even against CarbNS isolates, MIC90 of CFDC was ≤ 4 mg/L irrespective of bacterial species. The in vitro activity of CFDC did not vary by infection sites (RTI, BSI, SSTI, and UTI). CFDC MIC90 is almost similar among EU countries (Czech Republic, France, Germany, Greece, Hungary, Italy, Spain, Sweden, Turkey, United Kingdom) except for *A. baumannii* originating from Russia.

Conclusions: The potent *in vitro* activity of CFDC was demonstrated against CarbNS isolates of Enterobacteriaceae, *A. baumannii*, and *P. aeruginosa* collected from Europe, with greater than 97% of isolates having MIC values ≤4 mg/L. These results indicate this agent has high potential for treating infections caused by these problematic organisms.