29th ECCMID Amsterdam, Netherlands 13 – 16 April 2019

The congress of ESCMID

P1851 Cefiderocol *in vitro* activity against Gram-negative clinical isolates collected in Europe: result from SIDERO-CR-2014/2016

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Background: Cefiderocol (CFDC) is a novel parenteral siderophore cephalosporin with potent activity against a wide variety of Gram-negative pathogens including carbapenem-resistant strains. In this study, we compared that the *in vitro* activity of cefiderocol and comparator agents against carbapenem-resistant clinical isolates collected in 2014-2016 from Europe based on the information on geography.

Materials/methods: A total of 545 Enterobacteriaceae, 267 *Acinetobacter baumannii*, 182 *Pseudomonas aeruginosa*, and 1 *Stenotrophomonas maltophilia* complex collected from 24 European countries (Austria, Belgium, Croatia, Czech Republic, Denmark, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Poland, Portugal, Romania, Russia, Serbia, Slovenia, Spain, Sweden, Turkey, United Kingdom) in 2014 - 2016 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 variety of Gram-negative bacteria with MIC_{90} of ≤8 mg/L as shown in the table. CFDC MIC_{90} against *K. pneumoniae* and *P. aeruginosa* ranged from 2 to 4, and 0.5 to 2 mg/L among EU countries. However, MIC_{90} against *A. baumannii* showed wide range (0.25 to 32 mg/L). Against the isolates from Russia and Turkey, MIC_{90} was 16 and 32 mg/L, respectively. In total, cefiderocol non-susceptible strains (MIC: ≥ 8 mg/L) represented 4.7% (45/995 strains), most of which were *A. baumannii* from Russia and Turkey (31 isolates).

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 95.3% of isolates having MIC values ≤ 4 mg/L. These results indicate this agent has high potential for treating infections caused by these problematic organisms.