Antimicrobial Activity of Cefitobuten-Clavulanate When Tested against Clinical Enterobacterales Isolates Collected Worldwide in 2017

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Materials and Methods

- A total of 5,694 Enterobacterales isolates were collected in 2017, including 2,061 Citrobacter koseri, 1,850 Enterobacter aerogenes, 1,773 Enterobacter cloacae, 514 Enterobacter sakazakii, 192 Morganella morganii, 186 Providencia stuartii, 102 Citrobacter freundii, 83 Klebsiella pneumoniae, 81 Proteus mirabilis, 56 Enterobacter agglomerans, 21 Enterobacter hormaechei, 17 Enterobacter probioticus, and 11 Enterobacter hormaechei
- Cefitobuten-clavulanate (2:1 ratio) and comparator agents were susceptibility tested by reference broth microdilution methods at a central laboratory (JMI Laboratories, North Liberty, IA)
- Categorical interpretations from the Clinical and Laboratory Standards Institute
- MIC results were within acceptable ranges as published in CLSI documents

Results

- Isolates were testing fromEnterobacteriaceae (28.2%), Klebsiella pneumoniae (20.6%), Enterobacter cloacae (15.6%), and Proteus mirabilis (12.0%)
- The most ceftibuten-clavulanate-susceptible geographic area was the United States (88.4%), followed by Europe (85.7%), Asia-Pacific (85.5%), and Latin America/Caribbean (84.8%)
- The most ceftibuten-clavulanate-resistant geographic area was North Liberty, IA (56.7%), followed by South America (54.2%), Asia-Pacific (53.8%), and Europe (53.1%)

Conclusions

Ceftibuten-clavulanate was the most active agent tested against Enterobacterales isolates from 2017. Cefitobuten-clavulanate has shown a higher activity and a lower percentage of resistance in most regions compared to other comparator agents, including β-lactamase-resistant β-lactam agents. The results of this study support further clinical development of ceftibuten-clavulanate for treatment of Enterobacterales infections.