Prevalence of Carbapenemases and Antimicrobial Activity of Aztreonam-Avibactam and Comparator Agents Among a Global Collection of Enterobacterales

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Objective

We evaluated the presence of carbapenemases among carbapenem-resistant Enterobacterales (CRE) isolates collected during 2020 and documented the activity of aztreonam-avibactam and comparators against isolates stratified by carbapenemase type.

Methods

8,074 Enterobacterales isolates were consecutively collected (1 per patient) from hospitals in the Asia-Pacific region (8 centres in 6 countries), Europe (34 centres in 18 countries), and Latin America (8 centres in 6 countries).



Isolates were susceptibility tested by broth microdilution method.

- An aztreonam-avibactam PK/PD susceptible breakpoint of 8 mg/L was applied for comparison.
- EUCAST and FDA breakpoints were appli comparators.



CRE (imipenem or meropenem, CLSI criteria) i submitted to whole genome sequencing and ar lactamase-encoding genes.



Results

Among the isolates tested, 296 (3.7%) were CREs.

Carbapenemases were detected among 251 isolates (84.8% of the CRE; 3.1% overall).

Isolates were divided by enzyme class for further analysis.

Serine carbapenemases included KPC, OXA-48-like and IMI-4.



Results

