

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

Mariana Castanheira, Lalitagauri Deshpande, Valerie Kantro, Helio S. Sader, Rodrigo E. Mendes
JMI Laboratories, North Liberty, Iowa, US

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).

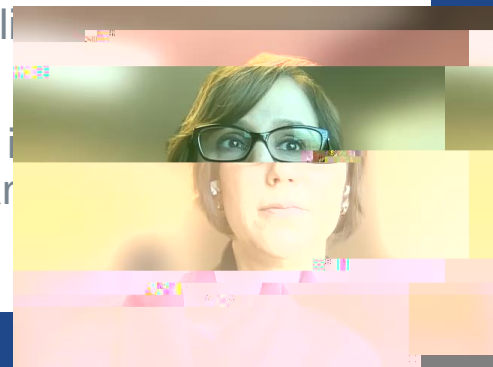


Isolates were susceptibility tested by broth microdilution method.

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



CRE (imipenem or meropenem, CLSI criteria) isolates were submitted to whole genome sequencing and analyzed for lactamase-encoding genes.



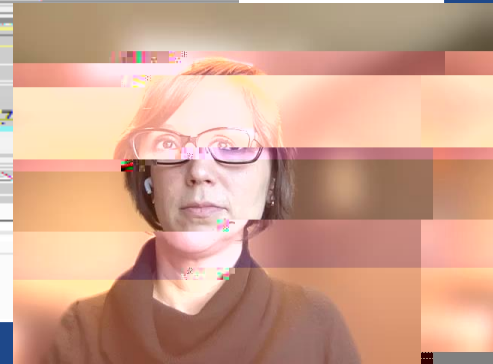
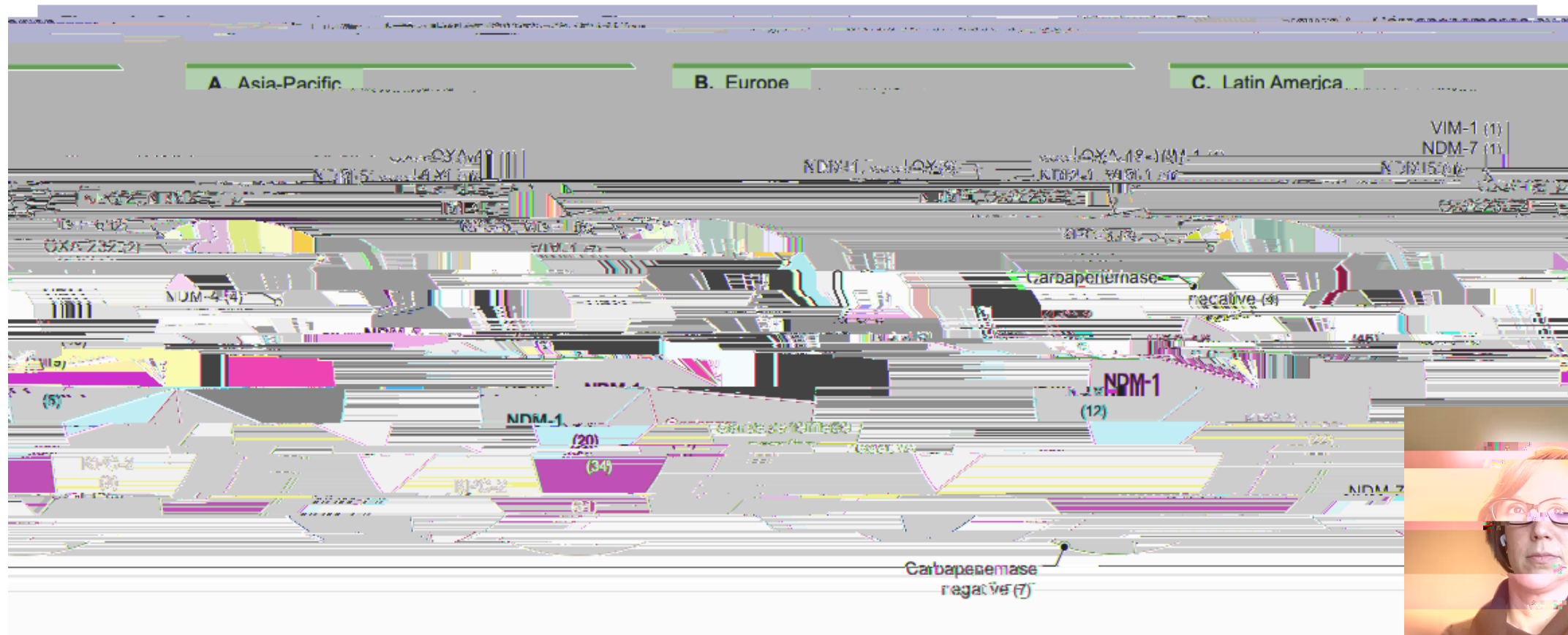
Results

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

