

Oritavancin Activity Against Gram-positive Isolates Responsible for Intra-Abdominal Infections in Europe and Surrounding Regions During 2015-2019

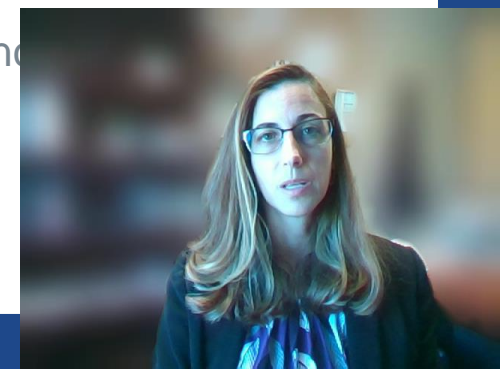
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Objective

To evaluate the activity of oritavancin, a lipoglycopeptide antibiotic indicated for acute bacterial skin and skin structure infection (ABSSSI), against Gram-positive pathogens causing intra-abdominal infection (IAI) in European hospitals and adjacent regions.

Methods

- A total of 972 Gram-positive isolates were collected from patients with IAI (1/patient) in 2015-2019.
- Isolates were recovered from 29 hospitals located in 11 European countries (Belgium, France, Germany, Greece, Ireland, Italy, Poland, Portugal, Spain, Sweden, United Kingdom), Israel, and Turkey.
- Isolates were identified by standard phenotypic test and MALDI-TOF and susceptibility tested by CLSI reference broth microdilution.
- EUCAST interpretive criteria were applied to oritavancin comparators.



Results

- *S. aureus* (265 isolates; 27.3%), *E. faecium* (255; 26.2%), and *E. faecalis* (250; 25.7%) were the most frequent Gram-positive pathogens.
- These gram-positive pathogens were equally prevalent across geographical regions.

- Oritavancin (MIC_{50/90}, 0.03/0.06 mg/L) inhibited all *S. aureus* at ≤0.12 mg/L, regardless of methicillin-resistant phenotype (23.8% of *S. aureus* were MRSA).
- Daptomycin (MIC_{50/90}, 0.25/0.5 mg/L), linezolid (MIC_{50/90}, 1/2 mg/L), and vancomycin (MIC_{50/90}, 0.5/1 mg/L) were also active against *S. aureus* (100% susceptible).
- Oritavancin displayed lower MIC values than comparator agents tested.

Figure 1. Distribution of gram-positive pathogens recovered from IAI in European countries and surrounding region (2015–2019)

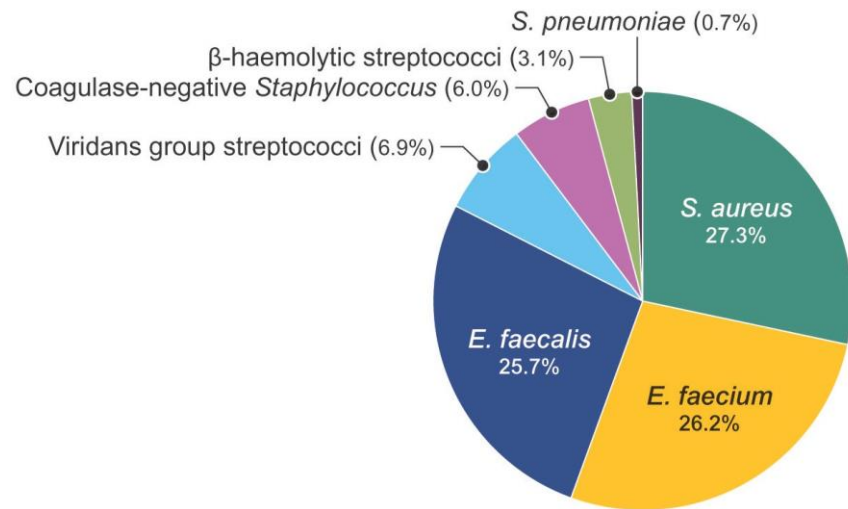
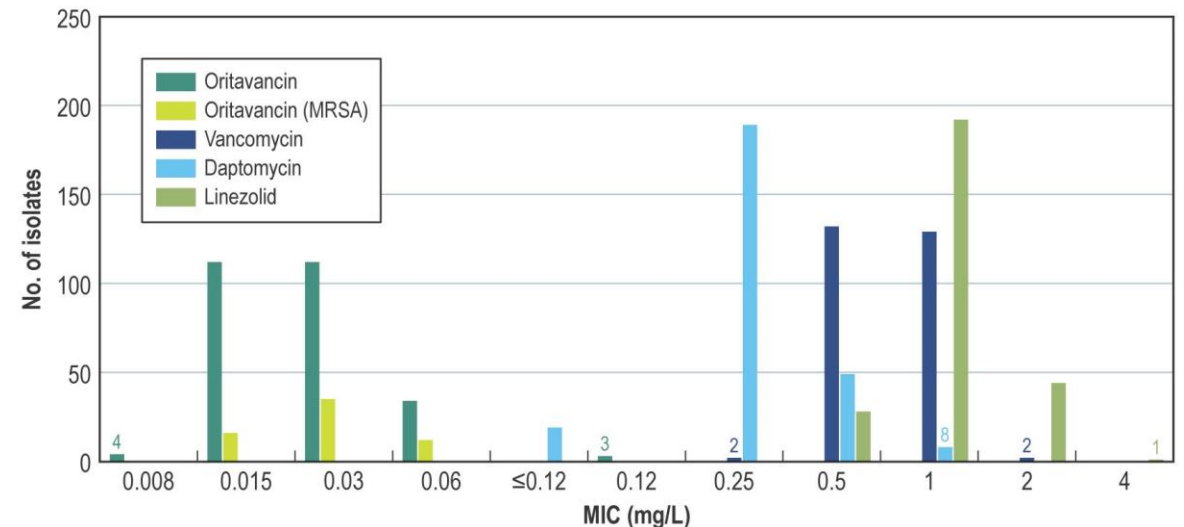


Figure 2. MIC distribution of oritavancin and comparator agents against *S. aureus*



Results

- Only oritavancin (MIC₅₀/MIC₉₀, 0.015/0.03 mg/L) and linezolid (MIC₅₀/MIC₉₀, 1/2 mg/L; 100% susceptible) remained active against vancomycin-resistant *E. faecium* (16.9% of *E. faecium*).
- Oritavancin inhibited 100% and 99.2% of *E. faecium* (MIC₅₀/MIC₉₀, 0.004/0.015 mg/L) and *E. faecalis* (MIC₅₀/MIC₉₀, 0.015/0.03 mg/L) isolates at ≤0.12 mg/L, respectively.
- Oritavancin inhibited all CoNS isolates at ≤0.25 mg/L, and showed activity against VGS (MIC_{50/90}, 0.015/0.12 mg/L; 100% susceptible) and BHS (MIC_{50/90}, 0.06/0.25 mg/L; 93.3% susceptible).

Table 1. Activity of oritavancin and comparator agents against Gram-positive pathogens causing IAI in European and surrounding hospitals (2015-2019)

Organism/Phenotype (no. isolates)	MIC ₅₀ /MIC ₉₀ in mg/L (%S using EUCAST criteria) ^a			
	Oritavancin	Vancomycin	Linezolid	Daptomycin
<i>S. aureus</i> (265)	0.03/0.06 (100)	0.5/1 (100)	1/2 (100)	0.25/0.5 (100)
MRSA (63)	0.03/0.06 (100)	1/1 (100)	1/2 (100)	0.25/0.5 (100)
<i>E. faecalis</i> (250)	0.015/0.03 (-)	1/2 (99.6)	1/2 (100)	1/1 (-)
<i>E. faecium</i> (255)	0.004/0.015 (-)	≤0.5/>16 (82.7)	1/2 (100)	1/2 (-)
VRE (43)	0.015/0.03 (-)	>16/>16 (0.0)	1/2 (100)	1/2 (-)
VGS (67)	0.015/0.12 (100) ^b	0.5/1 (100)	1/1 (-)	0.25/0.5 (-)
BHS (30)	0.06/0.25 (93.3) ^c	0.5/0.5 (100)	1/2 (100)	0.12/0.25 (100)
CoNS (58)	0.06/0.12 (-)	1/2 (100)	0.5/1 (100.0)	0.5/0.5 (100)

^a -, breakpoint not available.

^a Criteria as published by EUCAST (2021).

^b The breakpoint for the *S. anginosus* group was applied to all Viridans group streptococci.

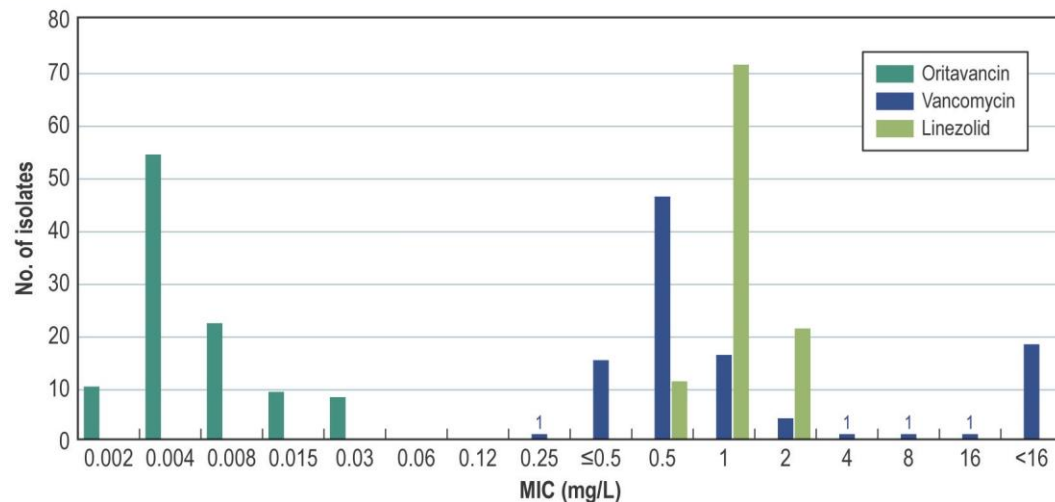
^c Breakpoints for streptococci groups A, B, C, and G have been applied to all β-haemolytic streptococci.



Results

- 40.4% of *E. faecium* isolates displayed elevated daptomycin MIC values (MIC, 2-4 mg/L), 17.4% of which were VRE.

Figure 3. MIC distribution of oritavancin, vancomycin, and linezolid against *E. faecium* displaying daptomycin MIC of 2–4 mg/L



Conclusions

- Oritavancin displayed potent MICs against all Gram-positive isolates causing IAI in European and surrounding hospitals, including MRSA, VRE, and *E. faecium* displaying elevated daptomycin MIC values (MIC, 2-4 mg/L) subsets.

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