AAR SUNDAY - 506

Is there another option other than Daptomycin for Difficult-To-Treat Vancomycin-Resistant *Enterococcus faecium*. In-Vitro Activity of Telavancin, Dalbavancin and Oritavancin.

Tapia Gordon, MLS; Daniel Navas, MLS; Jose Alexander, MD; Angela Charles, MLS

AdventHealth Orlando
Jose.alexander@adventhealth.com

Background

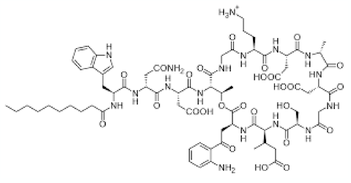
Enterococci, which are members of the human gastrointestinal tract, are generally harmless. However, vancomycin-resistant enterococci (VRE) are becoming difficult to treat when becoming opportunistic. *Enterococcus faecium* is the more resistant species of the genus, with over half of US nosocomial isolates express resistance to multiple agents. This study compares the in-vitro activity of telavancin (TEL), dalbavancin (DAL), daptomycin (DAP) and oritavancin (OR) against *E. faecium* VRE isolates from multiple sources, highlighting the increasing prevalence of vancomycin-resistant *E. faecium* in hospital settings.

Agents	Susceptible Breakpoint
Daptomycin	≤4µg/mL
Oritavancin	≤0.12µg/mL
Dalbavancin	≤0.25µg/mL
Telavancin	≤0.25µg/mL

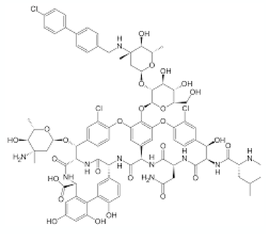
Table 1. *2023 CLSI susceptible breakpoints*

Methods

A total of 39 *E. faecium* VRE isolated from urine (n= 22), blood (n= 6), body fluid (n = 6), wounds (n= 3), surgery (n= 2), and tissue (n= 1) where included. MALDI-TOF Vitek®MS (bioMérieux, Inc.) was used as the definitive identification method, and the VITEK®2 AST-GP75 card (bioMérieux, Inc.) was used for determining vancomycin resistance. Individual susceptibilities for DAP, TEL, and DAL were performed using MTS™ gradient strips (Liofilchem®), and for OR the ComASP™ microbroth dilution (Liofilchem®) was used. The 2023 CLSI M100 breakpoints (BP) were used as reference.



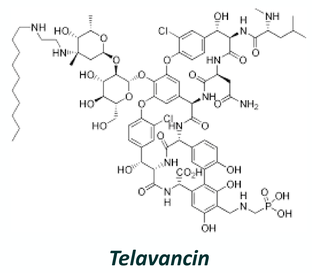
Vancomycin



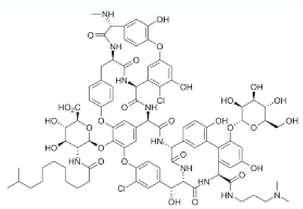
Oritavancin

Results

Out of the 39 *E. faecium* VRE, 32 (87%) were susceptible to DAP with susceptible BP of <4 µg/mL and a $MIC_{50/90}$, of 2/4 µg/mL and a range of 0.5 to 16 µg/mL. TEL with a susceptible BP of <0.25 µg/mL exhibited 10% (4/39) susceptibility with a $MIC_{50/90}$ of 1/4 µg/mL and a range of 0.016 to 8 µg/mL. DAL with a susceptible BP of <0.25 µg/mL showed 18% (7/39) susceptibility and a $MIC_{50/90}$ of 16/32 µg/mL, with a range of 0.032 to 32 µg/mL. OR a susceptible BP of <0.12 µg/mL had a 42% (n=17) susceptibility rate with a $MIC_{50/90}$ of 0.125/2 µg/mL and a range of 0.004 to 4 µg/mL.



Telavancin



Dalbavancin

Conclusion

Daptomycin demonstrated 82% susceptibility against 39 *Enterococcus faecium* VRE isolates, followed by oritavancin with 42% susceptible rate. Dalbavancin and telavancin demonstrated a susceptibility of 18% and 10% respectively. Based on these results, daptomycin was the agent with the best in-vitro performance against for *E. faecium* VRE, followed by oritavancin.

	Daptomycin %S	Oritavancin %S	Dalbavancin %S	Telavancin %S
E. faecium VRE	87% (32/39)	42% (17/39)	18% (7/39)	10% (4/39)

Table 2. *Number and percentage of E. faecium VRE susceptible to daptomycin, oritavancin, dalbavancin & telavancin*

AdventHealth