Antimicrobial Activity of Dalbavancin and Comparators against Gram-positive Bacteria Causing Bacteraemia in Patients with Skin and Skin Structure Infections (2017-2021)

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Objectives

To evaluate the results for organisms isolated from patients with bacteraemia where skin and skin structure infection (SSSI) was reported as the primary site of infection.

Materials and Methods

- 14,273 Gram-positive bacilli (GPB) were consecutively collected from patients with bacteraemia in 2017-2021.
- Among those, 1,254 isolates (8.8%) were SSSI cases.
- These organisms were collected in 20 medical centres in the US and 35 medical centres in 19 European countries.
- Isolates were tested by CLSI reference broth microdilution.
- EUCAST interpretive criteria were applied.

ECCMID 2022, Lisbon, Portugal

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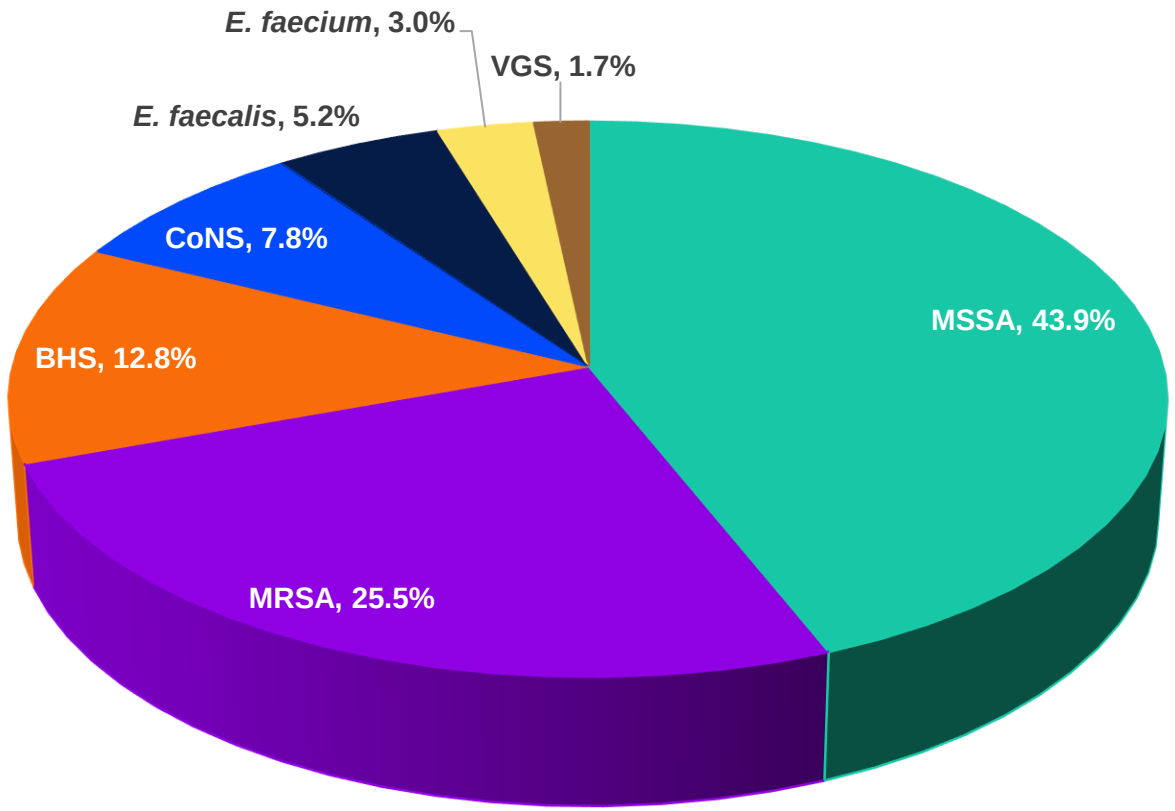
Results

Figure 1. Frequency of Gram-positive bacteria causing bacteremia in patients with SSSI

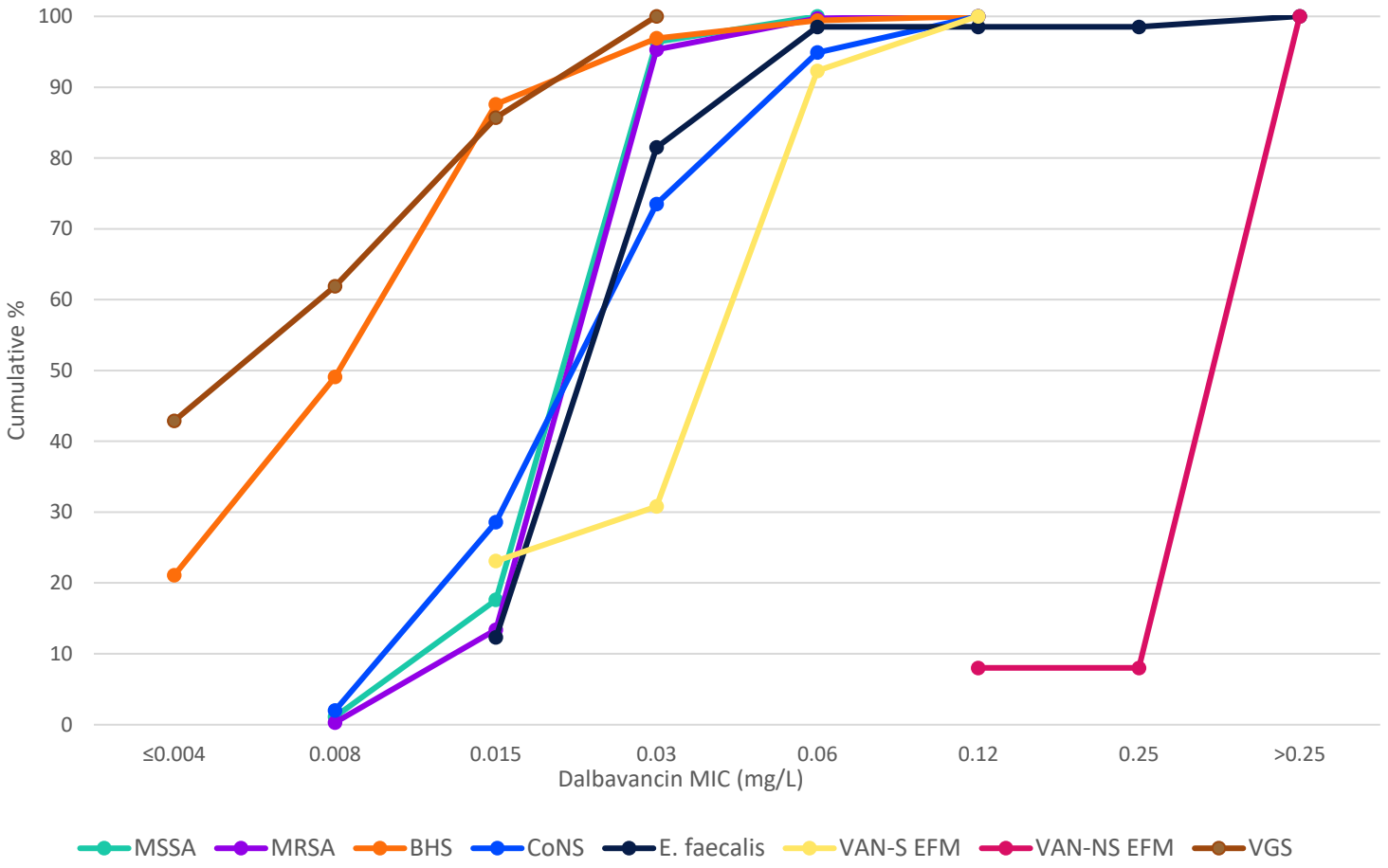


- The most common organisms isolated from bacteraemia associated with SSSI were *S. aureus* (871; 69.5%), BHS (161; 12.8%), CoNS (98; 7.8%), and *E. faecalis* (65; 5.2%; Figure 1).
- Among *S. aureus*, 36.7% of isolates were methicillin-resistant (MRSA).
- Dalbavancin was highly active against MRSA and methicillin-susceptible *S. aureus* (MSSA) with $MIC_{50/90}$ of 0.03/0.03 mg/L and all isolates inhibited at ≤0.12 mg/L.
- Against MRSA, dalbavancin MIC results were 8- to 64-fold lower than daptomycin, teicoplanin, vancomycin, and linezolid.

Abbreviations: MSSA, methicillin-susceptible *S. aureus*; MRSA, methicillin-resistant *S. aureus*; BHS, β-haemolytic streptococci; CoNS, coagulase-negative staphylococci; VGS, viridans group streptococci.

Results

Figure 2. Dalbavancin cumulative MIC distributions



- Dalbavancin ($MIC_{50/90}$, 0.03/0.06 mg/L) and daptomycin ($MIC_{50/90}$, 0.25/0.5 mg/L) were the most active agents against CoNS.
- Dalbavancin ($MIC_{50/90}$, 0.03/0.06 mg/L; 98.5%S) was 16- to 32-fold more active than daptomycin, vancomycin, and linezolid against *E. faecalis.*
- Among *E. faecium*, vancomycin susceptibility rates were 57.9% in EU and only 10.5% in the US.
- Dalbavancin inhibited all vancomycin-susceptible *E. faecium* at ≤0.12 mg/L ($MIC_{50/90}$, 0.06/0.06 mg/L).

Abbreviations: MSSA, methicillin-susceptible *S. aureus*; MRSA, methicillin-resistant *S. aureus*; BHS, β-haemolytic streptococci; CoNS, coagulase-negative staphylococci; VAN, vancomycin; NS, nonsusceptible; VGS, viridans group streptococci.

Results

In summary, dalbavancin was highly active (100.0% inhibited at ≤0.12 mg/L) against:

Organism (no.)	MIC_{50} (mg/L)	MIC_{90} (mg/L)	Highest MIC (mg/L)
MSSA (551)	0.03	0.03	0.06
MRSA (320)	0.03	0.03	0.12
BHS (161)	0.015	0.03	0.12
CoNS (98)	0.03	0.06	0.12
VAN-S EF (64)	0.03	0.06	0.06
VAN-S EFM (13)	0.06	0.06	0.12
VGS (113)	0.008	0.03	0.03

Conclusions

- Dalbavancin exhibited potent activity and broad spectrum against GPB causing bacteraemia in patients with SSSI.
- All isolates were inhibited at ≤0.12 mg/L of dalbavancin, except for vancomycin-resistant enterococci (VRE).