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THERAPEUTIC DRUG MONITORING OF DALBAVANCIN: A STEP FORWARD IN PERSONALIZED LONG-TERM THERAPY

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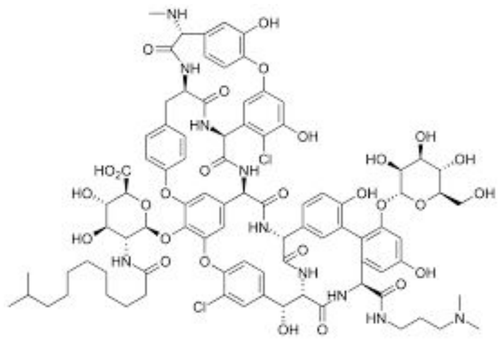
BACKGROUND AND IMPORTANCE



- **DALBAVANCIN** → Long-acting lipoglycopeptide active against Gram-positive bacteria, exhibiting rapid bactericidal activity.
- For difficult-to-treat infections, different dosing regimens have been proposed but **limited comparative clinical pharmacokinetic** (PK) data are available
- Although with limited evidence, **therapeutic drug monitoring (TDM)** has been employed to extend dosing intervals while ensuring optimal drug exposure.

AIM AND OBJECTIVES

To evaluate, in a **pilot TDM study**, whether dalbavancin maintains **sufficient plasma concentrations (Cp)** at different time points after administration, potentially allowing extended dosing intervals.

MATERIAL AND METHODS

Design: Prospective cohort study
Study period: November 2024- December 2025

Population: All patients with dalbavancin TDM
Collected data: Demographic, clinical, PK and microbiological data
Sample analysis: Validated UPLC-MS/MS Method

Sampling Time Points

- ≤ 1 week
- 1-2 weeks
- 2-3 weeks
- > 3 weeks

PK/PD Target

Cp > **8 mg/L** (for MIC≤0.125 mg/L)

RESULTS

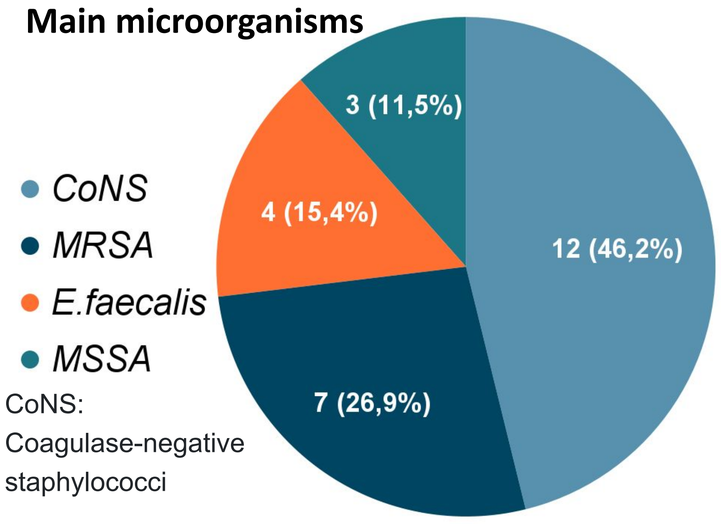
n = 22
50% ♀

Age	**72 [28-95] years**
BMI	**26.6 [17.8-38.8] kg/m²**
Charlson Index	**2 [0-6]**
eGFR (baseline)	**80 [31-119] mL/min**
Serum Creatinine	**0.9 [0.5-1.7] mg/dL**

Osteoarticular infections 72,7%

Endovascular infections 27,3%

Main microorganisms



CoNS: Coagulase-negative staphylococci

26 isolates from 22 patients

Targeted therapy
20 patients (90.9%)

Polymicrobial infections
7 (31.8%)

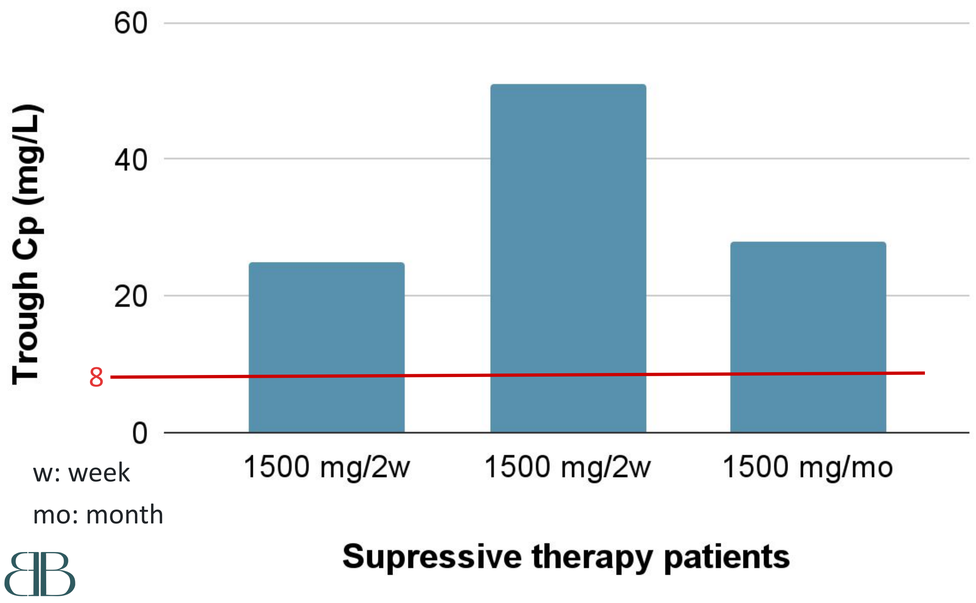
MIC data
Available in 8 isolates (36.4%)
87.5% with MIC <0.125 mg/L

18 patients received a **single dose** (81.8%)

Table 1. Dalbavancin Cp following a single dose at different sampling times

	Sampling time			
Single dose	<1 week	1-2 weeks	2- 3 weeks	>3 weeks
1500 mg group (n = 15)	2 patients	8 patients	3 patients	2 patients
Median Cp (mg/L)	45,7 [37,4-53,9]	48,8 [24,2-78,7]	17,3 [16,6-23,4]	31,8 [22,6-41]
1000 mg group (n = 3)	2 patients	1 patient	0	0
Median Cp (mg/L)	58,0 [38,5-77,4]	52,5	-	-

4 patients received **multiple doses**
(3 on suppressive therapy)



Additional case

1500 mg → 1w → **1500 mg** → 2w → **Cp= 55,8 mg/L**

CONCLUSION AND RELEVANCE

In this pilot TDM study, dalbavancin Cp after single or multiple doses **remained well above the established threshold (8 mg/L) in ALL patients.**

This results support the **potential for extending dosing intervals** to:

- Optimize treatment outcomes
- Improve patient convenience
- Reduce healthcare costs

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