

# Evaluation of Appropriate Daptomycin Usage in an Academic Medical Center

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## Background

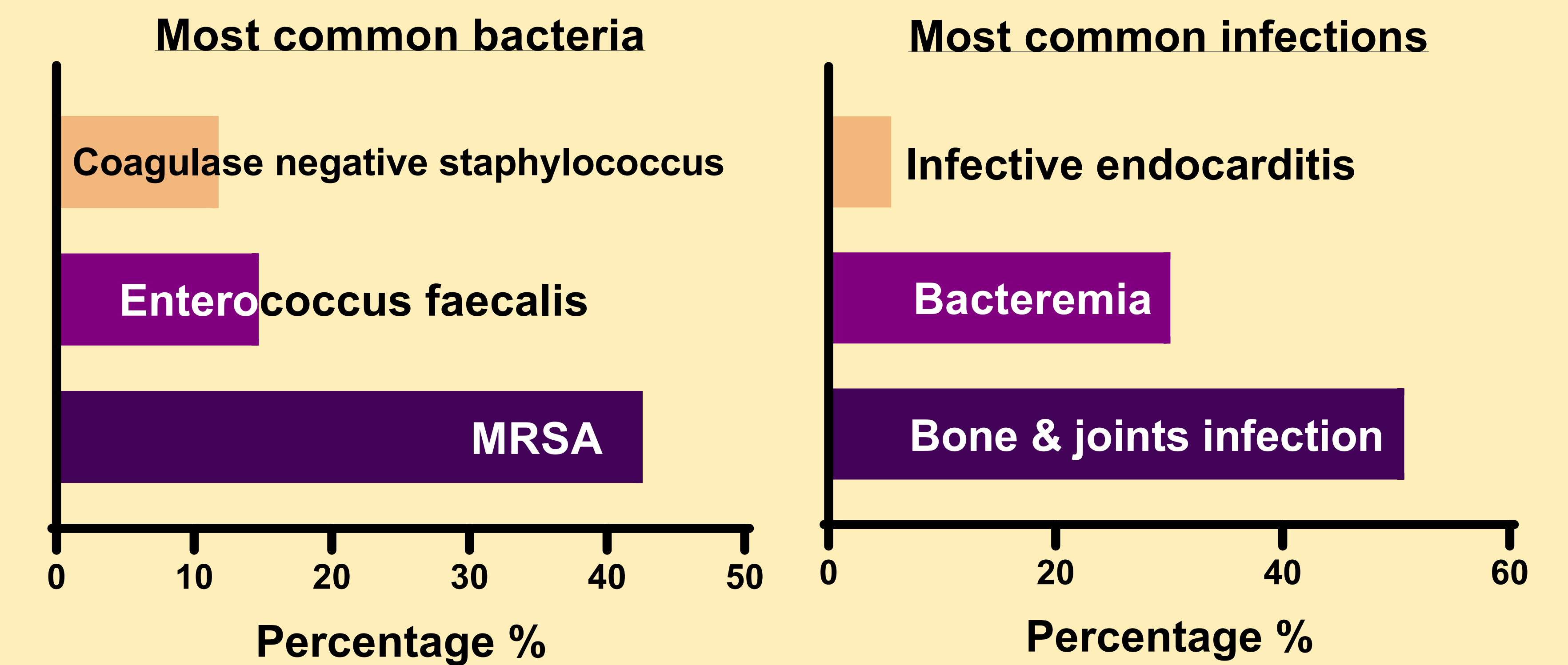
- Daptomycin is a cyclic lipopeptide antibiotic that has rapid in vitro bactericidal activity against a wide spectrum of Gram-positive organisms. It is approved by Food and Drug Administration (FDA) for complicated skin and soft tissue infection, *S. aureus* bacteremia, and right-sided infective endocarditis.
- The usage of daptomycin at our institution has steadily increased, with a threefold increase from January 2020 to January 2022, according to Days of Therapy Data (DOT).
- The increased usage prompted this study to determine whether daptomycin use at our institution is appropriately indicated and supervised by the infection disease service and whether most use is targeted or empiric therapy.

## Methods

- We conducted a retrospective descriptive study on 74 patients who received daptomycin over the last few months at our facility in Northwest Louisiana.
- We studied the patient's age and gender, type of infection, indications, empiric versus targeted therapy, culture results, infectious disease consultation, CPK levels, adverse reaction, concurrent statin use, and duration of treatment.
- Study data were collected and managed using REDCap electronic data capture tools hosted at our institution.

## Results

- Seventy-four patients were included in the analysis. The median age was 53.50 (range, 22-90 yrs.) and 47 patients (63.5%) were male.
- The most common infections were bone and joint (37, 50.7%), followed by bacteremia (22, 30.1%), followed by infective endocarditis (4, 5.5%).
- In 70.3% (52 patients), daptomycin was used as targeted therapy. MRSA was the most common bacteria (29, 42.6%), followed by *Enterococcus faecalis* (10, 14.7%), and *Coagulase negative staphylococcus* (8, 11.8%).
- The infectious disease service was consulted in 87.3% (62 patients).
- The CPK levels at baseline range from 11 to 774 units/L, with a median of 59 units/L. After few days of daptomycin treatment, CPK levels range from 13 to 3000 unit/L, with a median of 65 unit/L.
- Two patients had adverse reactions, both neuromuscular, and both were taking statins concurrently with daptomycin.
- The duration of daptomycin received ranges from one to 56 days, with a median of 14 days.
- Thirty-six patients (48.6%) completed their course of daptomycin, 20 (27%) patients had early discontinuation, 11 patients (14.9%) were lost to follow-up in the clinic, 4 patient (5.4%) were still on daptomycin at the time of data collection, and 3 patients (4.1%) died during hospitalization.



Indications	
MRSA with vancomycin MIC $\geq$ 2 $\mu$ g/ml based on MicroScan	33.8%
An alternative to vancomycin in acute renal failure	18.9%
Clinical or/and microbiological failure on the previous antibiotic regimen	13.5%

## Conclusion

- Most daptomycin usage in our institution was wisely indicated under the supervision of the infectious disease service and was primarily used as targeted therapy.