Alternatives To Guideline Directed Therapy In Bacterial Endocarditis

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BACKGROUND

- Current guidelines recommend therapy with intravenous (IV) antibiotics for 4-6 weeks for most cases of infective endocarditis (IE).
- Almost 1 in 4 patients are readmitted for endocarditis in the US.
- The POET trial demonstrated that partial oral antibiotic treatment is non-inferior to IV antibiotic therapy in patients with left-sided endocarditis.
- Partial treatment with dalbavancin or shorter durations of therapy in patients undergoing valve surgery can also lead to positive clinical outcomes.

METHODS

- This is a case series study performed at the University of Kentucky from 9/7/2021 to 4/15/2022.
- Oral and long-acting IV treatment pathways were developed by the endocarditis team, the oral antibiotic approach from the POET trial, using 2 antibiotics from different classes.
- The primary outcomes were 90-day mortality, 30-day readmission, relapsed infection, and completion of therapy.

CASE IDENTIFICATION

- 196 patients were assessed for eligibility
- 176 patients excluded: OPAT candidates, completed course inpatient and/or in a long-term facility
- 20 patients included
  - Partial oral therapy 12(60%)
  - Partial therapy with Dalbavancin 5 (25%)
  - Shortened duration after valve surgery 3 (15%)
  - Converted to oral therapy due to side effects 2/5 (40%)

Our case series study demonstrated successful utilization of alternative approaches to guideline directed treatment for endocarditis*

* High rates of therapy completion, low rates of mortality, re-admission, and relapsed infection, including in persons who inject drugs.
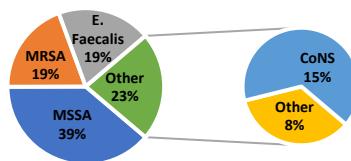
Table 1: Demographics and clinical characteristics

Characteristics	N = 20 (%)
Age in years, median(range)	39 (27-67)
Sex, Female	11 (55%)
Race, White	19 (95%)
PWID	14 (70%)
HCV	8 (40%)
Hypertension	2 (10%)
HBV	1 (5%)
Diabetes Mellitus	5 (25%)
COPD	2 (10%)
History of infective endocarditis	5 (25%)

Table 2: Complications of Infective Endocarditis

Complication	N (%)
Moderate to severe valve insufficiency	14 (70%)
Septic pulmonary emboli	11 (55%)
Septic cerebral emboli	3 (15%)
Osteomyelitis	7 (35%)

Fig.1 Distribution of pathogens causing infective endocarditis

MRSA 19%, MSSA 39%, E. Faecalis 19%, Other 23%; CoNS 15%, Other 8%

RESULTS

- Twenty patients with IE were treated with our modified antibiotic pathway.
- Demographics and clinical characteristics described in Table 1, complications associated to IE described in Table 2.
- Distribution of pathogens causing IE described in Figure 1
- Successful Completion of Treatment: 10/12 (71.4%) patients and 3/5 (60%) patients completed oral and dalbavancin treatment, respectively.
- Dalbavancin regimen with 2/5 (40%) patients transitioning to the oral group due to side effects.
- All three (100%) patients with shortened durations of therapy following valve surgery (2 weeks of antibiotic therapy) completed treatment.
- One (20%) patient treated with dalbavancin with crossover to oral therapy developed relapsed bacteremia with the same organism after self-discontinuing a suppressive oral antibiotic.
- 9/20 (45%) patients underwent surgical procedure, 8/9 (88.8%) valve replacement and 1/9 (11.1%) vacuum-based device.
- **Outcomes are described in Table 3.**

Table 3. Positive outcomes in patients receiving alternative regimens

Outcomes	Partial oral therapy N: 12	Partial therapy with Dalbavancin N: 5	Shortened duration after valve surgery N:3
90-day mortality	0	0	0
30-day readmission	1 (8.3%)	1 (20%)	0
Completion of therapy	8 (66.6%)	3 (60%)	3 (100%)
Relapsed	0	1 (20%)	0

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