121. Cardiac Implantable Electronic Device-Related Infective Endocarditis (CIED-IE): Clinical Features and Outcomes of Patients with Definite IE Who Fulfilled Both Major Duke Criteria

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Background. Cardiac implantable electronic device-related infective endocarditis (CIED-IE) comprises 10–50% of total CIED infections. Patients with definite CIED-IE who fulfill both major modified Duke criteria have not been well characterized.

Methods. Data from the Multicenter Electrophysiology Device Infection Cohort, a prospective, multinational study of CIED infections were used to describe a subset of patients with CIED-IE who met both major Duke criteria for definite IE (bloodstream infection and intracardiac vegetations [VEG]).

Results. Of 433 patients with CIED infection, 144 (33.3%) had definite CIED-IE. The median age was 68 years and 77.1% were male. Twelve (8.3%) had past CIED in 307 patients. In cases of EB, early CVC removal within 3 days of bacteremia is associated with a favorable outcome in the CLABSI without MB/CRBSI group compared with the non-CLABSI group.

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122. Evaluation of Early Clinical Failure Criteria in Patients with Enterococcal Species Bloodstream Infection

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Background. Early clinical failure criteria (ECFC) were recently proposed to predict poor clinical outcomes in patients with Gram-negative bloodstream infections (BSI). ECFC are measured between 72 and 96 hours from collection of index blood culture (Table 1). The objective of this study was to evaluate the performance of ECFC in predicting 28-day mortality in patients with Enterococcus spp. BSI.

Methods. This IRB-approved, retrospective, observational cohort study included adult patients hospitalized at Prisma Health–Midlands hospitals from January 1, 2015 to July 31, 2018 with a monomicrobial BSI due to Enterococcus spp. Patients with a previous episode of Enterococcus spp. BSI within one year prior to index culture or those who died within 72 hours were excluded. Multivariable logistic regression was used to examine the association between ECFC and 28-day all-cause mortality. The area under the receiver operating characteristic (ROC) curve was used to measure model discrimination.

Results. A total of 157 patients with Enterococcus spp. BSI were included. Overall, the median age was 66 years, 96 (61%) were men, and 106 (68%) had community-onset BSI. The urinary tract was the most common source of infection (45; 29%), followed by intravascular infections (34; 22%). Twenty-eight patients (18%) died within 28 days of BSI. After adjustments for age and Charlson Comorbidity Index, every one-point increase in the ECFC was associated with an 80% increase in the odds of 28-day mortality (OR 1.8, 95% CI 1.3–2.4, P = 0.001). Mortality increased from 4% in patients with ECFC of 0 to 11%, 28%, and 38% at ECFC increased to 1, 2, and 3, respectively. The area under ROC curve of ECFC model in predicting 28-day mortality was 0.74 with ECFC of 2 identified as the best cutoff point. Mortality was 8% in patients with ECFC 2 compared with 33% in those with ECFC 2 (P < 0.001).

Conclusion. ECFC demonstrated good discrimination to predict 28-day mortality in hospitalized adult patients with Enterococcus spp. BSI. These criteria may have utility as a stratification or randomization tool in future clinical investigations evaluating optimal antimicrobial treatment duration or effectiveness of intravenous to oral switch therapy in uncomplicated Enterococcus spp. BSI.

Early Clinical Failure Criteria

| Point Allocation |
|------------------|
| Systolic blood pressure < 100 mmHg or vasopressor use | 1 |
| Heart rate > 100 beats/minute | 1 |
| Respiratory rate ≥ 22 breaths/minute or mechanical ventilation | 1 |
| Altered mental status | 1 |
| Peripheral white blood cell count > 12,000/mm³ | 1 |

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123. Impact of Enterococcal Bacteremia on Clinical Outcomes in Patients with Liver Cirrhosis

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Background. Patients with liver cirrhosis are at an increased risk for bacterial infections due to bacteria overgrowth and dysregulation of the intestinal barrier function. These infectious complications are associated with significant morbidity and mortality. Currently, there is a paucity of literature evaluating the clinical outcomes of patients with enterococcal bacteremia and cirrhosis. We hypothesized that patients with cirrhosis and subsequent enterococcal bacteremia would have a higher odds of mortality.

Methods. This was a retrospective, case–control study including adult patients (>18 years) with liver cirrhosis and 1> positive blood culture with Enterococcus species (ENs) admitted from June 2013 through August 2018. These cases were then matched with cirrhotic patients without enterococcal bacteremia (NO ENT) in a 1:1 ratio based on the Model for End-Stage Liver Disease (MELD) score. The primary endpoint was all-cause inpatient mortality. Multivariable logistic regression was used to control for other patient covariates.

Results. A total of 136 patients were identified during the study period (68 ENT and 68 NO ENT). The median length of stay was significantly longer in ENT patients (24.3 vs. 9 days, P < 0.001), while NO ENT patients were more likely to have renal dysfunction (55.9% vs. 83.8%, P = 0.001). All other baseline characteristics between Poster Abstracts • OFID 2019:6 (Suppl 2) • S91
the two groups were similar. Inpatient mortality was found to be significantly higher in ENT patients than NO ENT patients (31.5% vs. 29.4%. P = 0.009). In the multivariable analysis, risk factors found to be independently associated with mortality included enterococcal bacteraemia (OR 3.96, 95% CI 1.61–9.73), MELD score (OR 1.11, 95% CI 1.06–1.19), and APACHE II score (OR 1.14, 95% CI 1.06–1.23).

Conclusion. Enterococcal bacteraemia, MELD score, and APACHE II score were found to be independent risk factors for all-cause inpatient mortality in patients with liver cirrhosis. Future studies are needed to elucidate how treatment choice and bacterial characteristics might also influence patient outcomes.

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124. Impact of Levofloxacin MIC on Outcomes with Levofloxacin Step-down Therapy in Enterobacteriaceae Bloodstream Infections
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Objectives. Enterococcal bacteraemia with levofloxacin step-down therapy, retrospectively comparing patients with isolates with low levofloxacin MICs (≤0.5 mg/L) to high MICs (1–2 mg/L).

Methods. This retrospective, two-center cohort study included patients 21 years of age with a monomicrobial Enterobacteriaceae bacteraemia with a levofloxacin MIC ≤2 mg/L from March 2017 through December 2018. Patients had to have received treatment with ≥23 days of levofloxacin step-down therapy, initial intravenous therapy with an agent active against the isolated organism, and total duration not exceeding 16 days from first negative blood culture. A subset of patients whose isolates had low levofloxacin MICs were randomly selected for comparison to all patients with high levofloxacin MICs in a 1:3 ratio. The primary outcome was a composite endpoint of recurrence and mortality within 30 days of completion of the antibiotic course. Secondary outcomes included post-culture length of stay (LOS) and 30-day readmission rate.

Results. Thirty-three patients with high MIC and 99 with low MIC were included. Urinary source was predominant and occurred in 44% of patients, and Escherichia coli was the infecting organism in 48%. Over 80% of patients experienced source resolution or control. The composite endpoint occurred in 8.1% of the low MIC group and 9.1% of the high MIC group (P = 0.856). Median LOS was 4.9 days (IQR 3.7–8.0) in the low MIC group and 4.3 days (IQR 3.2–6.8) in the high MIC group (P = 0.384), and readmission rate was 17.2% in the low MIC group and 15.2% in the high MIC group (P = 0.787).

Conclusion. There was no between-group difference in the primary outcome of recurrence and mortality, with a low overall event rate and short LOS post-culture. These results suggest that levofloxacin effectiveness may be sustained in patients with MICs of 1 or 2 despite levofloxacin not meeting susceptibility criteria by new definitions.

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125. The Clinical Impact of 16S rRNA Bacterial Sequencing in Infective Endocarditis
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Background. The Clinical and Laboratory Standards Institute reduced the levofloxacin minimum inhibitory concentration (MIC) breakpoint from ≤2 to ≤0.5 mg/L for Enterobacteriaceae in 2019 guidelines. The reduction is based on Monte Carlo simulations for a levofloxacin dose of 750 mg daily. The aim of this study was to determine whether there was a difference in clinical outcomes in the treatment of Enterobacteriaceae with levofloxacin step-down therapy, retrospectively comparing patients with isolates with low levofloxacin MICs (≤0.5 mg/L) to high MICs (1–2 mg/L).

Methods. This retrospective, two-center cohort study included patients 21 years of age with a monomicrobial Enterobacteriaceae bacteraemia with a levofloxacin MIC ≤2 mg/L from March 2017 through December 2018. Patients had to have received treatment with ≥23 days of levofloxacin step-down therapy, initial intravenous therapy with an agent active against the isolated organism, and total duration not exceeding 16 days from first negative blood culture. A subset of patients whose isolates had low levofloxacin MICs were randomly selected for comparison to all patients with high levofloxacin MICs in a 1:3 ratio. The primary outcome was a composite endpoint of recurrence and mortality within 30 days of completion of the antibiotic course. Secondary outcomes included post-culture length of stay (LOS) and 30-day readmission rate.

Results. Thirty-three patients with high MIC and 99 with low MIC were included. Urinary source was predominant and occurred in 44% of patients, and Escherichia coli was the infecting organism in 48%. Over 80% of patients experienced source resolution or control. The composite endpoint occurred in 8.1% of the low MIC group and 9.1% of the high MIC group (P = 0.856). Median LOS was 4.9 days (IQR 3.7–8.0) in the low MIC group and 4.3 days (IQR 3.2–6.8) in the high MIC group (P = 0.384), and readmission rate was 17.2% in the low MIC group and 15.2% in the high MIC group (P = 0.787).

Conclusion. There was no between-group difference in the primary outcome of recurrence and mortality, with a low overall event rate and short LOS post-culture. These results suggest that levofloxacin effectiveness may be sustained in patients with MICs of 1 or 2 despite levofloxacin not meeting susceptibility criteria by new definitions.

Disclosures. All authors: No reported disclosures.

202. Two patients were noted to have operative findings consistent with infection with 16 (72.7%) having corresponding positive PCR results. 4/11 (9.8%) patients had their management plans changed based solely on the PCR findings. In 23/41 (56.1%) cases the PCR result was never referenced by any medical provider in the electronic medical record. There were 7 (17.1%) cases where patients received 6 weeks of antibiotics despite presenting with possible culture-negative endocarditis, noninfectious operative findings and negative valve PCRs which were not reviewed.

Conclusion. 16S rRNA PCR sequencing is a useful tool for obtaining a microbiologic diagnosis in cases of possible or culture-negative endocarditis. The test has significant potential to impact individual patient care and in a subset of cases may be used to escalate antibiotic therapy. However, testing delays and cumbersome resulting methods impede bacterial sequencing from reaching its full potential as a diagnostic modality.

Table 1. 16S rRNA PCR results among patients with definite, possible and rejected endocarditis by Modified Duke Criteria.

| PCR Result | Positive Valve PCR (%) | PCR Reviewed (%) | Culture Negative (%) | Management Change | Positive Valve Culture (%) | Infection OR Findings (%) |
|------------|------------------------|-----------------|---------------------|------------------|---------------------------|--------------------------|
| Definite Endocarditis | 43.8 | 31.3 | 88.1 | 3.3 | 45.5 | 22.7 |
| Possible Endocarditis | (n = 22) | (n = 22) | (n = 22) | (n = 22) | (n = 22) | (n = 22) |
| Rejected Endocarditis | (n = 3) | (n = 3) | (n = 3) | (n = 3) | (n = 3) | (n = 3) |
| Culture Negative | 13.6 | 13.6 | 13.6 | 13.6 | 13.6 | 13.6 |
| Positive Valve PCR | 21.4 | 21.4 | 21.4 | 21.4 | 21.4 | 21.4 |
| PCR Reviewed | 36.4 | 36.4 | 36.4 | 36.4 | 36.4 | 36.4 |
| Culture Negative | 13.6 | 13.6 | 13.6 | 13.6 | 13.6 | 13.6 |
| Positive Valve PCR | 21.4 | 21.4 | 21.4 | 21.4 | 21.4 | 21.4 |
| PCR Reviewed | 36.4 | 36.4 | 36.4 | 36.4 | 36.4 | 36.4 |

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126. Cascade of Care for Opioid Use Disorder in Patients with Infective Endocarditis
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Background. The term “Cascade of Care” has been used to analyze care delivered by a health system for conditions such as HIV, hepatitis C, tuberculosis, and diabetes. It outlines sequential steps required to reach a specific outcome (i.e., viral suppression in the case of HIV). This allows to estimate the proportion of patients achieving each step and to identify points in care. Medication-assisted treatment (MAT) is integral in the treatment of patients with infective endocarditis (IE) and opioid use disorder (OUD). We propose a Cascade of Care aiming to identify fundamental milestones in the management of these patients.

Methods. A retrospective cohort study examined patients with IE in the setting of OUD hospitalized between July 1, 2007 and January 1, 2015 to the Cleveland Clinic. We identified 4 key steps along the treatment cascade of these patients and estimated the proportion of patients: (1) evaluated by an addiction treatment service, (2) prescribed MAT while in-patient, (3) prescribed MAT while in-patient, (4) continued MAT at least 90 days after discharge.

Results. Of 273 patients with IE in the setting of OUD, 134 (49%) were evaluated by an addiction treatment service; 45 (17%) were prescribed MAT while in-patient; 3) prescribed MAT while in-patient, (4) continued MAT at least 90 days after discharge.

Conclusion. We identified 4 key steps along the treatment cascade of these patients and estimated the proportion of patients: (1) evaluated by an addiction treatment service, (2) prescribed MAT while in-patient, (3) prescribed MAT while in-patient, (4) continued MAT at least 90 days after discharge.

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127. Novel Treatment Approach for Left Ventricular Assist Device-related Infections
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