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1082. Meta-Analysis of Survival Outcomes in People Who Inject Drugs After Cardiac Surgery for Infective Endocarditis

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1079. When Does a Trans-Esophageal Echocardiogram (TEE) Change Management of *Staphylococcus aureus* Bacteremia (SAB)?

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Background. The recognition of infective endocarditis (IE) as a serious complication of SAB has led to a low threshold for echocardiography, extended treatment (eTx) with anti-staphylococcal agents (anti-SA), and even surgery. However, indications for eTx outside of IE are numerous. We sought to determine the frequency in which findings from a TEE changed clinical SAB management.

Methods. Adults with SAB within the Calgary Health Zone between 2012 and 2014 were included if both a transthoracic echocardiogram (TTE) and TEE were performed within 7 days of each other. Patients potentially benefiting from eTx courses were a priori defined as having ≥1 of; (1) metastatic phenomena, (2) complicated SAB (defined as community acquired (CA), persistent fever/bacteremia at ≥48 hours), (3) intracardiac devices, and/or (4) Duke criteria defined IE (separately evaluated using TTE or TEE). Patient demographics, treatment (including changes to anti-SA duration and surgical indications), and clinical outcomes were extracted and evaluated.

Results. Of 961 SAB episodes, 179 (18% MRSA) met inclusion criteria (median 3.0 days, IQR 1.9–5.1 between TTE and TEE). Within the cohort 29% (n = 51) had metastatic phenomena (intracranial; 9% [n = 16], vertebral; 8% [n = 14]; empyema; 6% [n = 11]). Complicated bacteremia was present in 89% (n = 159), while 13% (n = 23) had intravascular hardware (39% pacemakers, 65% valve prostheses). IE was diagnosed in 22% (n = 40) of SAB episodes, with TTE identifying 58% of vegetations (n = 23) and TEE identifying an additional 30% (n = 15). Of the cohort, 89% (n = 160), 37% (n = 67), 4% (n = 7) of SAB had ≥1, 2, and 3 nonechocardiographic indications for eTx, respectively. Only one patient met criteria for eTx solely based on IE diagnosed from concordant TTE and TEE. Actual duration of therapy did not differ in SAB episodes that had ≥1 a priori eTx criteria but had a negative TEE relative to those who had a positive TEE (36.7 days, IQR 23.4–48.6 vs. 43.8 days, IQR 33.3–49.5, P = 0.17). Of the 15 episodes of TEE-only evident IE, 14 were CA, 12 had prolonged BSI, and nine embolic phenomena. Only 11 patients in the cohort required cardiac surgery, none were identified exclusively by TEE.

Conclusion. Routine performance of TEE may not be required in all SAB as many patients have alternate indications for eTx with anti-SA regardless of TEE findings.

Disclosures. **All authors:** No reported disclosures.

This abstract has been withdrawn at the author's request.

1081. Antimicrobial Activity of Dalbavancin Tested Against Gram-Positive Organisms Isolated From Patients With Infective Endocarditis in United States and European Medical Centers

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Background. The management of endocarditis requires aggressive and prolonged antimicrobial treatment. Dalbavancin (DALBA) has demonstrated potent *in vitro* activity against Gram-positive (GP) organisms commonly responsible for endocarditis and is being evaluated for treatment of complicated bacteremia and infective endocarditis.

Methods. A total of 626 GP organisms were collected from patients with a diagnosis of bacterial endocarditis in the United States (n = 222) and Europe (n = 404) from 2007 to 2017 via the SENTRY Antimicrobial Surveillance Program and were tested for susceptibility (S) against DALBA and comparators by CLSI broth microdilution.

Results. The most common organisms were *S. aureus* (48.4%), *E. faecalis* (EF; 19.6%), and viridans group streptococci (VGS; 12.5%). DALBA and daptomycin (DAPTO) showed complete activity (100.0%S) against *S. aureus*, but DALBA MICs were 4- to 8-fold lower (table). Linezolid (LZD) and teicoplanin were also active against all SA; whereas vancomycin (VAN) and trimethoprim–sulfamethoxazole were active against 99.7% of isolates. Ceftaroline (CPT) exhibited potent activity against methicillin-susceptible *S. aureus* (MSSA; MIC_{90}, 0.25 mg/L; 100.0%S) and inhibited 78.4% of methicillin-resistant *S. aureus* (MRSA) isolates at ≤1 mg/L. All EF isolates were S to ampicillin, DAPTO, and LZD, whereas 97.6% (120/123) of isolates were S to DALBA (MIC_{90}, 0.06 mg/L) and 96.7%S to VAN (MIC_{90}, 2 mg/L). Against EF, DALBA MIC values were 16- to 32-fold lower than DAPTO and VAN. All VGS and coagulase-negative staphylococcal (CoNS) isolates were S to DALBA, DAPTO, VAN, and LZD, and the highest CPT MICs were 0.5 mg/L for VGS and 4 mg/L for CoNS (93.5% inhibited at ≤1 mg/L). Against *E. faecium* (EFM), 65.7% of isolates were inhibited at ≤0.25 mg/L of DALBA and 62.9% were VAN-S. All EFM were S to DAPTO and LNZ. β-Hemolytic streptococci (BHS) was S to most antimicrobial agents, and only 66.7% of *S. pneumoniae* (SPN) isolates were PEN-S at ≤0.06 mg/L.

Conclusion. DALBA exhibited potent *in vitro* activity against a large collection of GP isolates recovered from patients with endocarditis in the United States and Europe medical centers. These results support further investigations to determine the role of DALBA in the treatment of infective endocarditis.

Organism (no. tested)	MIC_{50}/MIC_{50} (%S)			
	DALBA	DAPTO	VAN	CPT
SA (303)	0.06/0.06 (100.00)	0.25/0.5 (100.0)	1/1 (99.7)	0.25/1 (92.9)
MSSA (202)	0.06/0.06 (100.0)	0.25/0.5 (100.0)	1/1 (100.0)	0.25/0.25 (100.0)
MRSA (101)	=0.03/0.06 (100.0)	0.25/0.5 (100.0)	1/1 (99.0)	1/2 (78.4)
EF (123)	0.06/0.06 (97.6)	1/2 (100.0)	1/2 (96.7)	1/8 (NA)
VGS (78)	=0.03/0.06 (100.0)	0.25/1 (100.0)	0.5/1 (100.0)	=0.015/0.06 (NA)
CoNS (46)	=0.03/0.12 (NA)	0.25/0.5 (100.0)	1/2 (100.0)	0.25/0.5 (NA)
EFM (35)	0.12/>2 (NA)	2/2 (100.0)	1/>16 (62.9)	>8/>8 (NA)
BHS (24)	=0.03/0.06 (100.0)	0.12/0.25 (100.0)	0.5/0.5 (100.0)	=0.015/=0.015 (100.0)
SPN (15)	=0.03/=0.03 (NA)	NT	0.25/0.5 (100.0)	=0.015/0.06 (100.0)

NA, not applicable (no breakpoint by CLSI or US FDA); NT, not tested

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1082. Meta-Analysis of Survival Outcomes in People Who Inject Drugs After Cardiac Surgery for Infective Endocarditis

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Background. The United States' opioid epidemic has led to an increase in people who inject drugs (PWID) and opioid-associated infections, including infectious endocarditis (IE). Cardiac surgery is often indicated in IE to improve outcomes but is controversial in PWID due to the concerns about continued injection drug use leading to risk for reinfection and decreased survival. In response, we assessed the long-term survival after cardiac valve surgery in PWID compared with people who do not inject drugs (non-PWID) in the published literature.

Methods. We performed a systematic review and meta-analysis (MA) of studies that reported survival data after surgery for IE in PWID. We searched PUBMED up to April 2018. We extracted Kaplan–Meier (KM) curves from included studies. From the KM curves, we used an algorithm to estimate individual participant data (eIPD). In a one-step approach, we ran a Cox proportional hazards (CPH) model analysis of the eIPD with study random effects. In a two-step approach, we fitted CPH models by individual study; then, we ran a mixed-effects MA model of the log hazard ratios (HR) and standard errors.

Results. We identified 11 retrospective studies. Of these, six reported comparisons of PWID vs. non-PWID, and five reported results for PWID only. Based on eIPD, we included 407 PWID and 1,877 non-PWID. Mean age for PWID was 36.7 years (95% CI 34.4–39.1) and for non-PWID was 52.0 years (95% CI 45.3–59.4). There were 144 deaths (35.3%) in PWID and 559 (29.8%) deaths in non-PWID. We present by study and by group KM curves of eIPD (Figures 1 and 2). In one-step MA (included all 11 studies), the HR for PWID was 1.13 (95% CI 0.92–1.39). In two-step MA (included six comparison studies), heterogeneity was high (I^2 = 72%); and there was no significant between-group difference (HR 1.29, 95% CI 0.80–2.07) (Figure 3).

Conclusion. Survival time post-surgery of PWID was similar to that of non-PWID. These estimates are concerning, as PWID on average are much younger than non-PWID with IE. Future studies should explore interventions to improve outcomes in PWID after surgery, including treatment of addiction during and after the index hospitalization and provision of naloxone at the time of discharge.

Figure 1

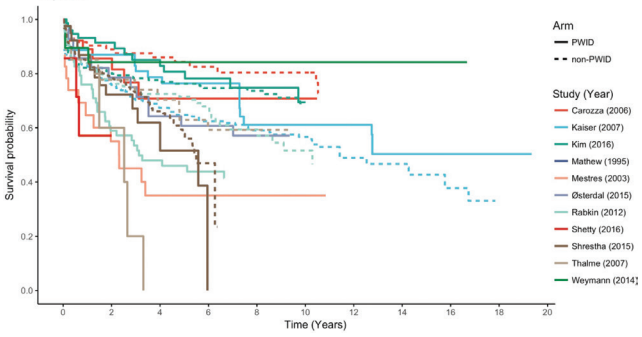


Figure 2

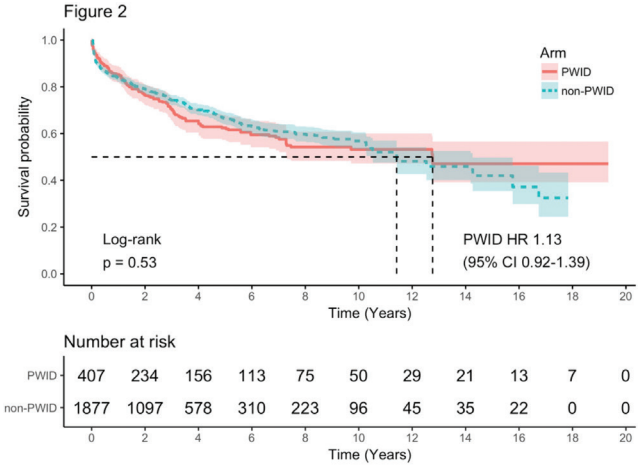
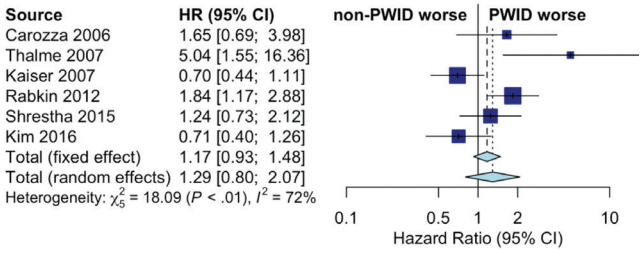


Figure 3



Disclosures. **All authors:** No reported disclosures.

1083. Long-Term Prognosis of 448 Infectious Endocarditis Followed by an Endocarditis Team

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Background. The management of infective endocarditis (IE) by an expert medico-surgical team through multidisciplinary consultation meetings is now recommended. While it seems clear that it can improve the short-term prognosis of patients, long-term data are still scarce.

Methods. All patients hospitalized between 2013 and 2017 in the three teaching hospitals of our center with an IE treated by the multidisciplinary team were followed prospectively at 1, 3, 6, and 12 months. The main objective was to determine the 1-year mortality of the entire cohort treated by the team.

Results. During the study, 493 patients had a certain or possible IE and the outcome at 1 year was known for 448 of them (4 lost to follow-up and 41 followed for less than 1 year): 254 had native valve IE (57%) and 194 had prosthetic valve IE (43%). The median age of IE patients was 69.3 years (155 patients were over 75 years old) and 329 (73%) were men. Healthcare-associated IE (HAIE) accounted for 47% of cases. A microorganism was isolated in 92% of cases (*S. aureus* = 24%), 252 patients (56%) had an embolic events and 68 (15%) had heart failure. The Charlson Median Comorbidity Index (ICC) was 5.0. Two hundred sixteen patients (48%) underwent surgery. The mortality rates at 1 month, 3 months, 6 months, and 1 year were, respectively, 14.1%, 19.0%, 23.2%, and 27.7%. The ICC at inclusion of patients who died at 1 year was 6.0 vs. 4.0 for survivors. Mortality at 1 year was significantly higher in case of HAIE (33% vs. 23%), documented *S. aureus* IE (39% vs. 24%), exclusive medical treatment (40% vs. 15%), and heart failure (43% vs. 25%).

Conclusion. While the management of IE by an endocarditis team seems to improve the short-term prognosis of IE, 1-year mortality remains high as patients are increasingly older and have severe comorbidities. Our study confirms that early prognostic factors remain in the long term and that the prognosis is better in community-acquired IE with surgery.

Disclosures. **All authors:** No reported disclosures.

1084. Nocardia Cyriacigeorgica Endocarditis

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Background. Nocardia are beaded, branching Gram-positive rods that are partially acid fast and usually slow growing. *Nocardia cyriacigeorgica* was first described in 2001, and antimicrobial susceptibility patterns correspond with type VI *Nocardia asteroides* complex. *Nocardia* species are not a commonly associated with endocarditis, less than 20 cases to date have been documented. However, when *Nocardia endocarditis* is identified, the mortality rate is reported to be as high as 41% making antibiotic selection vital in the inpatient and outpatient

Methods. A 62-year-old male with a past medical history significant for severe chronic obstructive pulmonary disease (COPD), atrial fibrillation, atrial tachyarrhythmia, and congestive heart failure (CHF) presented to the emergency department (ED) with shortness of breath for 1 week. The patient was initiated on IV diltiazem, meropenem, and eventually required intubation. On hospital day, two blood cultures grew Gram-positive rods, which were eventually identified as aerobic Actinomycete. Culture was sent out for DNA sequencing and *N. cyriacigeorgica* was identified. Transthoracic echocardiogram showed possible mitral vegetation.

Results. Antimicrobial therapy was initially de-escalated from meropenem to ampicillin, but had to be escalated to ceftriaxone once *N. cyriacigeorgica* was identified by DNA sequencing. The organism was reported to be susceptible to amikacin, ceftriaxone, linezolid, tobramycin, and trimethoprim/sulfamethoxazole. The patient received 1 week of ceftriaxone therapy inpatient, and was discharged on an additional 3 weeks of ceftriaxone and 6 months of minocycline suppressive therapy.