were more likely to have mitral valve (39.4% vs. 25%, p=0.02) and aortic valve vegetations (46.2% vs. 15.2%, p< 0.001). 19% of patients with IE underwent valve replacement within 6 months, and 17% died within 90 days. A multivariable model that included age, gender, and IDU status, age was the only variable that remained independently associated with 90-day mortality (adjusted OR 1.031; 95% CI 1.006, 1.057; p< 0.01).

Conclusion: In this single-center experience, we found that methicillin-sensitive Staphylococcus aureus was the dominant organism among IDUs and non-IDUs. We also found that methicillin-resistant Staphylococcus aureus was significantly more prevalent among IDUs with IE. Provably related to an increase prevalence of colonization with resistant organisms in the community. Despite the shift in prevalence of methicillin-resistant Staphylococcus aureus among IDUs, there was no increased 90-day mortality risk after adjustment for age and gender.

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699. A Retrospective Review of the Progression of Cardiac Vegetations with treatment

Roomana Khan, MD[1]; Saleeha Asghar, MD[2]; Vivek Kak, MD[1]; [1]Henry Ford Allegiance Health, Jackson, Michigan; [2]Henry FOrd Alegiance Health, Jackson, Michigan

Session: P-28. Endocarditis

Background: The purpose of our study was to assess the natural history of cardiac vegetations in native valves(NVIE) including changes in size and/or resolution with adequate treatment, as well as analyze factors that influence initial size.

Methods: We did a retrospective review of 102 patients discharged with a diagnosis NVIE at a community hospital. These patients were then screened to see if they received an adequate course of antimicrobial therapy and had follow up echocardiograms. The primary outcome measured was the change in vegetation size. We also assessed secondary measures including pathogen identified, the valve involved, complications, and associated IDU and any co-infections.

Results: 31 patients fulfilled the study criteria and showed an initial mean vegetation size of 170mm upon initial echocardiography. The follow-up size after antibiotic treatment was 78mm suggesting a statistically significant relationship between antibiotic completion and reduction in vegetation size. (p-value 0.005).

T-Test was used for subgroup analysis and showed that the initial size of vegetations was significantly larger in IDUs (311) when compared to non-IDU (92)(p-value= 0.026).Patients who had embolic phenomena had significantly larger initial vegetations than those with no embolic complication.

Initial vegetation size was significantly larger for people with embolic complications (308 mm vs 82.65 mm, p-value 0.013).We also found that patients with Staphylococcal endocarditis had larger vegetations than those with non-staphylococcal endocarditis (264 vs 39, p-value 0.001). and treatment led to a larger decrease in vegetation size (152 vs 7, p value 0.007)

Conclusion: Our small study suggests that successful treatment of NVIE does lead to a decrease in vegetation size though resolution of the vegetation does not occur. We also found that embolic phenomenon tended to occur with larger vegetations with our study suggesting that a vegetation > 3 cm was more likely to embolize. Our study also shows that vegetations in NVIE in injection drug users were larger than those in non-IDU and vegetation size is larger in patients with staphylococcal endocarditis however successful treatment in these patients also leads to a larger decrease in size of these vegetations

Disclosures: **All Authors**: No reported disclosures

700. Ampicillin-Ceftriaxone Versus Ampicillin-Gentamicin for Definitive Therapy of *Enterococcus faecalis* Infective Endocarditis: A Propensity Score-Matched,Retrospective Cohort Analysis

Niyati H. Shah, MD-PhD[1]; Kathleen A. Shutt, MS[2]; Yohei Doi, MD, PhD[2]; Yohei Doi, MD, PhD[2]; [1]Department of Medicine, Veterans Affairs Pittsburgh Healthcare System, Pittsburgh, Pennsylvania; [2]University of Pittsburgh, Pittsburgh, Pennsylvania

Session: P-28. Endocarditis

Background: The mortality rate for *Enterococcus faecalis* infective endocarditis (EIE) is high. Ampicillin-ceftriaxone (AC) has emerged as an alternative antibiotic regimen with lower toxicity compared to ampicillin-gentamicin (AG), but evidence regarding its success in reducing EIE-associated mortality in the United States is limited. We retrospectively compared mortality in EIE patients treated with AG versus AC.

Methods: We conducted a retrospective, propensity score-matched, cohort analysis of EIE patients treated with AG or AC from 2010 to 2017 at three hospitals in Pittsburgh, Pennsylvania. Patients were included in the analysis if they were treated for EIE with either AC or AG as the pathogen-directed antibiotic regimen for at least forty-eight hours. We assessed 90-day mortality as the primary outcome, and in-hospital mortality, length of hospital stay, hospital readmissions, adverse events, and relapse of bacteremia as the secondary outcomes.

Results: A total of 190 patients with EIE (100 treated with AC and 90 with AG) were included. Ninety-day mortality was significantly higher in the AC group than the AG group (21% vs 8%, p = 0.02). After propensity score-matching, 56 patients in each group remained for the outcomes analysis. We observed similar rates of 90-day mortality (6% vs 4%, p = 0.55), bacteremia relapse (0 patients in both cohorts), treatment failure (0% vs 1%, p = 0.50), and 90-day hospital readmission (24% vs 23%, p = 0.85) in the AC and AG-treated patient cohorts. Adverse events were more common in patients treated with AG, and more patients in the AG cohort switched antibiotic regimens than in the AC group.

Conclusion: EIE patients treated with AC have similar mortality rates as those treated with AG, while AG is associated with increased toxicity and adverse events. Larger, multi-center studies are still needed to compare the two antibiotic regimens.

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701. Blood Stream Infection And Risk Of Endocarditis Following Cardiac Valve Repair: A Population-Based Study

Jack McHugh, M.B. B.Ch. B.A.O.[1]; Talha Khawaja, M.B. BS[1]; Larry M. Baddour, MD[2]; Larry M. Baddour, MD[2]; Juan Crestanello, MD[1]; Arman Arghami, MD[1]; Daniel DeSimone, MD[1]; Jennifer St. Sauver, MPH PhD[1]; [1]Mayo Clinic, Rochester, Minnesota; [2]Mayo Clinic College of Medicine, Rochester, MN

Session: P-28. Endocarditis

Background: Bloodstream infections (BSIs) confer an increased risk of infective endocarditis (IE) in patients with a prosthetic cardiac valve. This relationship is less well established in patients undergoing valve repair. We conducted a retrospective population-based study to determine the incidence of BSIs following valve repair and identify risk factors associated with the development of IE.

Methods: The Rochester Epidemiology Project (REP) data linkage system was used to identify all persons who underwent valve repair in a 7-county region in Southeastern Minnesota between January 1, 2010 and December 31, 2018. Medical records were screened for the development of a BSI from time of procedure until May 15, 2020. Patients were classified as having BSI only, BSI with IE at outset, or BSI with subsequent development of new IE. IE at outset was defined as cases where IE was diagnosed at the time of initial positive blood culture.

Results: A total of 387 patients underwent valve repair surgery. A total of 31 (8%) patients subsequently developed a BSI, 4% within one year of surgery. Seventeen patients underwent mitral repair with annuloplasty, 9 underwent tricuspid annuloplasty, and 5 had concurrent repairs. Median time to the development of BSI was 338 days. Of the 31 patients with BSI, 4 (13%) had BSI with IE at outset. No patients developed IE subsequent to BSI, *Enterococcus* spp. was responsible for 3 cases of IE, and MSSA for 1. All cases occurred within one year of surgery. Given the low incidence, statistical analysis of associated risk factors for IE was not feasible. All patients with BSI and IE at outset, however, died by the end of the study period, versus 11/27 in the BSI only group.

Conclusion: Incidence of BSIs was higher in patients undergoing cardiac valve repair than in the general population. The incidence of IE with a BSI was 13%, which is lower than what has been previously published. It is notable that all cases of IE occurred within one year of surgery. Recognizing that endothelialization of device surfaces occurs, it is tempting to speculate that the risk of IE may be time dependent and may decline over time. Subsequent investigation of this theory is underway.

Disclosures: Larry M. Baddour, MD, Boston Scientific (Consultant)

702. Characteristics of Infective Endocarditis (IE) and Predictors of 90-day Mortality Among People Who Do and Do Not Inject Drugs with IE in Seattle, Washington

Maria A. Corcorran, MD, MPH[1]; Jenell C. Stewart, DO, MPH[1]; Kristine F. Lan, MS[1]; Ayushi Gupta, MBA,MS,BDS[2]; Tanner N. Muggli, MS43; Jody C. Sharninghausen, MS44; Jordan Takasugi, BS Biology[4]; Ty J. Tietjen, MS44; Sara N. Glick, PhD, MPH[1]; Chetan Seshadri, MD[1]; Kevin Koomalsingh, MD[5]; Edward F. Gibbons, MD[6]; Robert Harrington, MD[1]; Shireesha Dhanireddy, MD[1]; Shireesha Dhanireddy, MD[1]; H. Nina Kim, MD, MSc[1]; [1]University of Washington, Seattle, Washington; [2]UW Department of Medicine, bothell, Washington; [3]UWSOM, Seattle, Washington; [4]University of Washington School of Medicine, Seattle, Washington; [5]Providence St Vincent's Medical Center, Beaverton, Oregon; [6]Harborview Medical Center, Seattle, Washington

Session: P-28. Endocarditis

Background: People who inject drugs (PWID) are at high risk for IE and account for a growing proportion of IE cases in the United States. We describe key characteristics of IE and predictors of 90-day mortality among people who do and do not inject drug at two large academic medical centers.

Methods: We used a string-searching and pattern-matching algorithm within all discharge (DC) summaries to query the electronic medical record (EMR) for cases of IE among adults ≥18 years of age at two academic medical centers in Seattle, Washington from December 1, 2013 to July 31, 2019. All cases were chart reviewed by a member of the study team to confirm a clinical diagnosis of IE and verify housing and PWID status, the latter defined as any injection drug use in the 3 months prior to admission. Microbiology and valve involvement were extracted from DC summaries and chart-reviewed where needed. Deaths were obtained from Washington state death index, which links to our EMR. Descriptive statistics were used to compare PWID and non-PWID with IE, and Kaplan-Meier log rank tests and Cox proportional hazard models were used to assess for predictors of 90-day mortality.

Results: We identified 387 patients with IE, 44% (n=166) of whom were PWID. When compared to non-PWID, PWID were younger (median age 33 vs. 55 years, p< 0.001) and more likely to be female (48% vs. 31%, p=0.001), homeless (41% vs. 9%, p< 0.001), have coagulase-positive Staphylococcal IE (69% vs. 32%, p< 0.001), and have right sided IE (66% vs. 26%, p< 0.001). Seventeen percent (n=64) of patients died within 90 days of admission, including 14% (n=23) of PWID and 19% (n=41) of non-PWID, with no difference in 90-day mortality between these groups (log-rank p=0.3). In univariate analyses, having left sided IE was the only predictor of 90-day mortality (HR 4.79, 95% CI 2.18 – 10.5).

Conclusion: Despite PWID being significantly younger and having a much higher frequency of right sided IE, they had similar 90-day mortality to non-PWID in this contemporary, urban cohort of hospitalized IE patients.

Table 1. Demographic Characteristics of People Who Do and Do Not Inject Drugs with Infective Endocarditis at Two Seattle Hospitals, 2014 – 2019

Table 1. Demographic Characteristics of People Who Do and Do Not Inject Drugs with Infective Endocarditis at Two Seattle Hospitals, 2014 – 2019

	Entire Cohort (n=387)	PWID (n=166)	Non-PWID (n=221)	p-value
Median Age (IQR)	45(32, 59)	33(28, 43)	55(42, 65)	< 0.001
Female Sex (%)	147(38)	79(48)	68(31)	0.001
Race (%)				0.08
White, non-Hispanic	291(75)	133(80)	158(71)	
American Indian / Alaska Native	24(6)	15(9)	9(4)	
Asian / Pacific Islander	16(4)	0(0)	16(7)	
Black	40(10)	13(8)	27(12)	
Latinx / Hispanic	16(4)	5(3)	11(5)	
Other	12(3)	5(3)	7(3)	
Health Insurance (%)	374(97)	165(99)	209(95)	0.02
Homeless (%)	87(22)	68(41)	19(9)	<0.001
Admitted to ICU (%)	180(47)	71(43)	109(49)	0.24
Cardiac Valve Surgery within 90 days (%)	87(22)	30(18)	57(26)	0.09
Microbiology of Infective Endocarditis (%)				<0.001
MRSA	85(22)	58(35)	27(12)	
MSSA	101(26)	57(34)	44(20)	
Streptococcus	88(23)	29(17)	59(27)	
Enterococcus	52(13)	25(15)	27(12)	
Coagulate Negative Staph	13(3)	1(1)	12(5)	
Candida	9(2)	1(1)	8(4)	
Other	67(17)	16(10)	51(23)	
Cardiac Valve Involved (%)				<0.001
Aortic	145(37)	44(27)	101(46)	
Mitral	140(36)	53(32)	87(39)	
Tricuspid	152(39)	103(62)	49(22)	
Pulmonic	14(4)	6(4)	8(4)	
Prosthetic Valve Endocarditis (%)	77(20)	15(9)	62(28)	<0.001

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703. Do Patients with Drug Use-Associated Infective Endocarditis Receive Differential Care?

Ashley Ceniceros, MD, MPH[1]; Uriel Felson, MD, MS[2]; Aaron Fox, MD, MS[2]; [1]Montefiore Medical Center, Albert Einstein College of Medicine, New York, New York; [2]Montefiore Medical Center, Bronx, New York

Session: P-28. Endocarditis

Background: Outpatient parenteral antimicrobial therapy (OPAT) is the preferred modality for long term intravenous antibiotics for infections such as infective endocarditis (IE). People with drug use-associated (DUA) infections achieve similar outcomes as those with non-DUA-infections when treated using OPAT. The study objective was to compare OPAT use between cohorts of patients with DUA-IE and non-DUA-IE.

Methods: This retrospective cohort study compared OPAT use for DUA-IE vs. non-DUA-IE in adults hospitalized between 1/1/15 and 9/1/19 at three Bronx, NY hospitals. We used multivariable logistic regression to assess the association between DUA-IE and discharge with OPAT, adjusting for clinically significant covariates that were decided a priori. Additional models excluded patients with unstable housing and those who left against medical advice (AMA).

Figure 1: Flow chart of inclusion and exclusion criteria

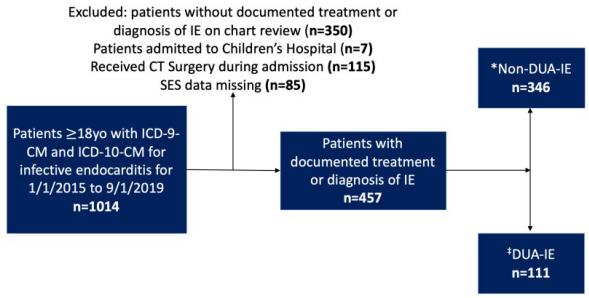

Figure 1: Flow chart of inclusion and exclusion criteria
[‡]Non-DUA-IE defined by admission ICD-9-CM or ICD-10-CM codes for IE
*DUA-IE defined by admission, outpatient, or ED ICD-9-CM or ICD-10-CM codes for drug use within the past 6 months, based on previously published and used algorithms + admission ICD-9-CM or ICD-10-CM codes for IE

Results: The cohort included 457 patients (346 non-DUA-IE, 111 DUA-IE). Compared to those with non-DUA-IE, DUA-IE patients were younger (mean age 54.9 years), more commonly male (65.8%), Hispanic (44.1%), Medicaid insured (40.5%), and undomiciled (9%). In models adjusting for age, sex, race/ethnicity, insurance, year of admission, length of stay, socioeconomic status, Charlson Comorbidity Index, MICU admissions, and infectious disease consults, DUA-IE patients had significantly lower odds of being discharged with OPAT than non-DUA-IE patients (aOR 0.16, 95% CI 0.08, 0.34). Odds of being discharged with OPAT remained lower for DUA-IE patients after excluding unstably housed patients (aOR 0.17, 95% CI 0.09, 0.38) and patients who left AMA (aOR 0.23, 95% CI 0.11, 0.47).

Table 1: Non-DUA-IE and DUA-IE Patient Characteristics

	Non-DUA-IE (346, 75.7%)	DUA-IE (111, 24.3%)	p-value
Mean age, years (SD)	69.1 (SD 15.6)	54.9 (SD 15.0)	**0.01**
Sex – Male (%)	189 (45.4%)	73 (65.8%)	**0.04**
Race/Ethnicity (%)			
White, Non-Hispanic	115 (33.2%)	23 (20.7%)	**0.01**
Black, Non-Hispanic	98 (28.3%)	27 (24.3%)	0.41
Hispanic	95 (27.5%)	49 (44.1%)	**0.001**
Other	25 (7.2%)	6 (5.4%)	0.51
Declined/unavailable	13 (3.8%)	6 (5.4%)	0.42
Insurance (%)			
Medicaid	69 (19.9%)	45 (40.5%)	**<0.001**
Medicare	219 (63.3%)	45 (40.5%)	**<0.001**
Private	58 (16.8%)	21 (19.0%)	0.60
Housing Status (%)			
Domiciled	333 (96.2%)	94 (84.7%)	**<0.001**
Undomiciled	1 (0.3%)	10 (9.0%)	**<0.001**
Unknown	12 (3.5%)	7 (6.3%)	0.27
Median socioeconomic status (IQR)*	-2.0 (-4.7,-0.7)	-3.4 (-6.5,-1.0)	**0.001**
Year of Admission			0.88
2015	89 (25.7%)	28 (25.2%)	
2016	75 (21.7%)	22 (19.8%)	
2017	68 (19.7%)	27 (24.3%)	
2018	82 (23.7%)	24 (21.6%)	
2019	32 (9.3%)	10 (9.0%)	
Median length of stay (days, IQR)	15 (10, 26)	15 (8, 29)	0.56
Discharge status/antimicrobials			
Outpatient parenteral antimicrobial therapy (OPAT) (%)	97 (28.0%)	14 (12.6%)	**0.001**
Intravenous antimicrobials administered at a skilled nursing facility (%)	119 (34.4%)	31 (27.9%)	0.21
Intravenous antimicrobials finished while inpatient (%)	22 (6.4%)	17 (15.3%)	**0.003**
Discharged with oral antimicrobials (%)	3 (0.9%)	2 (1.8%)	0.41
Left against medical advice (AMA) or eloped (%)	6 (1.7%)	18 (16.2%)	**<0.001**
Hospice (%)	13 (3.8%)	1 (0.9%)	0.40
Expired (%)	82 (23.7%)	25 (22.5%)	0.80
Transferred (%)	4 (1.2%)	3 (2.7%)	0.25

Table 1: Non-DUA-IE and DUA-IE Patient Characteristics
* Neighborhood socioeconomic status (SES) was calculated using the method of Roux standardized on New York State mean census block group SES

Table 2: Unadjusted and Adjusted Odds Ratios for Discharge with OPAT

	OPAT (n=347)	No OPAT (n=111)	Unadjusted Odds Ratio, 95% CI	p-value	*Adjusted Odds Ratio, 95% CI	p-value
DUA-IE (%)	14 (12.6%)	97 (28.0%)	0.37 (0.20, 0.68)	**0.001**	0.16 (0.08, 0.34)	**<0.001**
Age, years (mean, SD)	60.6 (16.4)	64.0 (16.9)	0.99 (0.98, 1.00)	0.27	0.97 (0.95, 0.99)	**0.004**
Sex – Male (%)	65 (58.6%)	197 (56.9%)	1.07 (0.69, 1.65)	0.76	0.97 (0.59, 1.59)	0.93
Race (%)						
White, non-Hispanic	29 (26.1%)	109 (31.5%)	Reference		Reference	
Black, non-Hispanic	29 (26.1%)	96 (27.8%)	1.14 (0.63, 2.03)	0.67	1.35 (0.69, 2.67)	0.38
Hispanic	44 (39.6%)	100 (28.9%)	1.65 (0.96, 2.84)	0.07	2.87 (1.49, 5.54)	**0.002**
Other	5 (4.5%)	26 (7.5%)	0.72 (0.25, 2.04)	0.54	0.84 (0.25, 2.88)	0.79
Patient declined/unavailable	4 (3.6%)	15 (4.3%)	1.00 (0.31, 3.25)	1.00	0.94 (0.26, 3.42)	0.89
Insurance (%)						
Private	26 (23.4%)	53 (15.3%)	Reference		Reference	
Medicare	59 (53.2%)	205 (59.3%)	0.59 (0.34, 1.02)	0.06	0.63 (0.32, 1.26)	0.19
Medicaid	26 (23.4%)	88 (25.4%)	0.60 (0.32, 1.14)	0.12	0.67 (0.31, 1.43)	0.30
Year of admission (%)						
2015	32 (28.8%)	85 (24.6%)	Reference		Reference	
2016	16 (14.4%)	81 (23.4%)	0.52 (0.27, 1.03)	0.06	0.56 (0.26, 1.24)	0.16
2017	27 (24.3%)	68 (19.7%)	1.05 (0.58, 1.93)	0.86	1.30 (0.64, 2.62)	0.47
2018	22 (19.8%)	84 (24.3%)	0.70 (0.37, 1.29)	0.25	0.70 (0.34, 1.44)	0.34
2019	14 (12.6%)	28 (8.1%)	1.33 (0.62, 2.84)	0.46	1.15 (0.47, 2.77)	0.51
Length of Stay, days (median, IQR)	12 (8, 17)	17 (10, 32)	0.95 (0.93, 0.97)	**<0.001**	0.94 (0.92, 0.97)	**<0.001**
SES (median, IQR)	-2.05 (-5.85, -0.40)	-2.24 (-5.58,-0.88)	1.02 (0.94, 1.10)	0.65	1.05 (0.95, 1.15)	0.35
Charlson Comorbidity Index (median, IQR)	5 (3, 8)	6 (4, 9)	0.97 (0.92, 1.03)	0.38	1.03 (0.96, 1.11)	0.38
MICU admission (%)	6 (5.4%)	67 (19.4%)	0.24 (0.10, 0.57)	**0.001**	0.23 (0.09, 0.59)	**0.002**
ID Consult (%)	106 (95.5%)	320 (92.5%)	1.72 (0.65, 4.60)	0.28	2.85 (0.95, 8.54)	0.06

Table 2: Unadjusted and Adjusted Odds Ratios for Discharge with OPAT
*Adjusted for covariates listed in tables 2 & 3