Table 1. Baseline demographic data of all 43 patients With S.suis endocarditis

| Characters | N=43 | n (%) |
|------------|------|-------|
| Male gender | 35 (81%) |
| Age (years), median (min,max) | 52 (20, 85) |
| Underlying conditions | None |
| Pre-existing structural heart diseases | 34 (79%) |
| Cardiovascular diseases | 5 (12%) |
| Neuro (CVA/TIA/Dementia) | 2 (5%) |
| Liver diseases | 2 (5%) |
| Diabetes mellitus | 3 (7%) |

Occupation

| Rice or vegetable farmers | 14 (32%) |
| Livestock workers/butcher/chef | 5 (12%) |
| Unemployed | 3 (7%) |
| Others or missing | 26 (61%) |

History of exposure

| Consumption of raw pork | 15 (35%) |
| Contact with pig | 2 (5%) |
| Unknown history of exposure | 26 (60%) |

Living area

| Urban | 20 (46%) |
| Sub-urban | 23 (53%) |

Table 2. Presenting signs/symptoms, prediction score and laboratory data on admission

| Characters | N=43 |
|------------|------|
| Presenting signs/symptoms | Fever (symptoms), n (%) |
| Fever (>37.5°C on admission), n (%) | 34 (79%) |
| Temperature on admission(°C), median (min,max) | 38.4 (37.5, 39.2) |
| Dyspnea, n (%) | 30 (70%) |
| Clinical heart failure, n (%) | 31 (72%) |
| Clinical meningitis, n (%) | 2 (5%) |
| Septic joints, n (%) | 5 (12%) |

Prediction scores on admission

| qSOFA score, median (min,max) | 0 (0, 3) |
| NEWS score, median (min,max) | 3 (0, 14) |
| Pitt Bacteremia Score*, median (min,max) | 0 (0, 10) |
| Laboratory data | White blood count, median (min,max) | 13250 (3800, 32300) |
| Serum creatinine, median (min,max) | 1.95 (0.6, 6.6) |

*only applicable to 28 patients with bacteremia

Table 3. Univariate and multivariate analysis of factors associated with morbidity and mortality

| Character | Univariate | p-value | Multivariate | p-value |
|-----------|------------|---------|--------------|---------|
| Age >60 years | 1.50 | 0.16, 7.89 | 0.63 |
| Male | 1.75 | 0.18, 16.65 | 0.626 |
| Pitt (37.5°C on admission) | 0.00 | 0.00, 1.00 | 0.792 |
| Clinical findings | Systemic embolism | 17.50 | (9.0, 161.1) | 0.002 |
| Left ventricular failure | 1.31 | 0.26, 6.48 | 0.73 |
| Echo findings | Moderately severe/severe regurgitation | 0.13 | 0.02, 0.73 | 0.025 |
| Peripancreatic abscess | 0.60 | 0.12, 2.92 | 0.527 |
| Vascular complication | 1.15 | 0.23, 5.63 | 0.883 |
| Surgical mortality | 0.31 | 0.06, 1.45 | 0.133 |

No cardiac operation | 0.27 | 0.09, 0.81 | 0.016 |

**Vegetation was not well visualized in patient.

Conclusion. S. suis endocarditis had high rate of valvular damage with complications and resulting systemic embolism. Surgery is required in majority of the patients. Embolism was associated with disability or death.

Disclosures. All Authors: No reported disclosures

690. High Mortality and Over-representation of Young Women Amongst People Who Inject Drugs Admitted with Infective Endocarditis in Saskatchewan, Canada from 2013-2018

Anmol Gupta, MD1; Sandy Kasir, n/a2; Savio Nguyen, n/a1; Stephanie Konrad, n/a1; Stuart Skinner, MD2; University of Saskatchewan, Regina, Saskatchewan, Canada; Saskatchewan Health Authority, Regina, Saskatchewan, Canada; Indigenous Services Canada, Regina, Saskatchewan, Canada

Session: P-32. Endocarditis

Background. The province of Saskatchewan has had the highest rates of HIV and Hepatitis C in Canada for over 10 years, the majority of which is related to People who inject drugs (PWID) and with higher proportion of young women. However, the most severe complications of injection drug use (IDU) are infective endocarditis (IE) and its associated sequelae. While high rates of IE have been noted, no data exists to show the burden of infective endocarditis and its clinical outcomes. Thus, we looked to determine the mortality and impact of IE amongst PWID and also establish the epidemiology while comparing to non-PWID IE.

Methods. This is a retrospective chart review of consecutive adult patients (age >18) admitted for IE, as defined by Duke’s IE Criteria, to tertiary care hospitals in Regina, the capital city of Saskatchewan, between January 1, 2013 and December 31, 2018. PWID were identified through chart documentation of self-reported IV drug use. Outcomes included 1-year mortality, surgical intervention and referral to addiction services.

Results. Of the total 227 patients in our cohort, 130 (57.3%) were female, and the 1-year mortality was 39.2%. PWID related IE comprised 132 (58.1%) of the cohort. In comparison to non-PWID related IE, PWID were younger (median age 38.0, compared to 68.0 for non-PWID), more likely to be female (RR 2.06; 95% CI [1.44-3.04]; p<0.001), to suffer right-sided disease (RR 9.14; 95% CI [4.74-15.14]; p<0.001) and less likely to receive surgical management (RR 0.36; 95% CI [0.27-0.77]; p<0.001). Surgical management was associated with lower mortality (RR 0.40; 95% CI [0.21-0.65]; p<0.001). Addiction support and treatment also was protective (RR 0.89; 95% CI [0.34-1.21]; p=0.051).

Conclusion. This cohort study of IE episodes shows for the first time the devastating impact of IDU in Saskatchewan and identifies PWID as having a 39% mortality at 1 year, which coupled with their younger age translates into an enormous years of life lost. Additionally, the over-representation of young women amongst PWID IE is consistent with the higher proportion of young women with HIV and HCV infections, and identifies them as a group that is particularly vulnerable to complications of IDU.

Targeted programs for PWID, particularly towards young women at risk are urgently needed.

Disclosures. All Authors: No reported disclosures

691. Infective Endocarditis with an Indication for Cardiac Surgery in a Tertiary Care Educational Hospital: Does Cardiac Surgery Improve Outcomes?

Deniz Akyol, Doctor1; Gunel Quliyeva, MD1; Selin Bardak ozem, n/a2; Meral Kaykoylu, n/a2; Tanus Yamazhan, Professor Doctor1; Sercan Uluosy, Professor Doctor1; Hilal Sipahi, Dr1; Meltem Taşbakan, n/a2; Oğuz Reşat Sipahi, Professor Doctor2;1; Doctor, Izmir, Izmir, Turkey; Ege University Faculty of Medicine, Izmir, Turkey; Professor Doctor, Izmir, Izmir, Turkey

Session: P-32. Endocarditis

Background. In this retrospective cohort study, it was aimed to compare the clinical characteristics and outcomes of IE cases without and with an indication for cardiac surgery in terms of whether they have been operated or not, in a tertiary-care educational hospital.

Methods. Patients that were followed up for definite IE (diagnosed according to modified Duke criteria between March 2007 and November 2020) with an indication for cardiac surgery according to European Society of Cardiology Guidelines, comprised the study group. Subjects were evaluated in terms of whether these cases have been operated or not, demographic features, underlying diseases, risk factors, clinical and laboratory findings, therapy responses, complications, and mortality. The timing of surgery is defined as emergency; surgery performed within 24 hours, urgent; within a few days, elective; after at least one-two weeks of antibiotic therapy. Statistical analysis was performed via Chi square and Student T tests and a p value < 0.05 was considered significant.

Results. A total of 90 patients with an indication for surgery, 33.3% patients in underwent surgery, 66.6% patients in not underwent surgery group fulfilled the study criteria. The most frequently seen complications in patients were fever (91.1%), cold-shiver (56.6%), weight-loss (27.7%), dyspnea (25.5%), and tachycardia (20%). Heart murmur was detected during cardiac auscultation of 44 patients. Mean blood leucocyte count, C-reactive protein and erythrocyte sedimentation rate were 12324 ± 6588/mm³ (1408-30330), 11.46 ± 8.38 mg/dl (0.18-34.6) and 61.43 ± 33.4 mm/h (2-130), respectively. There was no significant difference between two groups in terms of cardiac/non-cardiac risk factors, age, gender, etiologic agents, laboratory findings, septic embolisms and complications (Table 1). In total IE with an indication for surgery mortality was 27.7%. Mortality rate was significantly less and heart murmur was significantly higher in cases who underwent surgery than those did not undergo surgery (p: 0.0447).

Disclosures. All Authors: No reported disclosures

Abstracts • OFID 2021:8 (Suppl 1) • 5447
692. Coccidioides sp. Infective Endocarditis: A Review of the Literature
Sabirah N. Kasule, MD; Michael Apolinar, MD, MS; Christopher Salting, MD; Janis E. Blair, MD; Lisa Spiezer, MD; Holesarajispik R. Vikram, MD, MPH; Mayo Clinic in Arizona, Phoenix, Arizona; Mayo Clinic Hospital, Phoenix, Arizona
Session: P-32. Endocarditis
Background. Despite the endemic nature of Coccidioides sp. to the American Southwest, the incidence Coccidioides sp. infective endocarditis (CIE) is rare. Following successful treatment of a patient with CIE at our institution, we reviewed the literature to identify trends in disease presentation, patient characteristics, and outcomes.
Methods. We reviewed all cases of CIE reported since 1938. Details including patient demographics, underlying immunodeficiency, time to diagnosis, treatment, and outcome were collected for analysis of diagnostic challenges and survival.
Results. Including ours, we identified 11 published cases of CIE. The majority (7) occurred in men. 5 patients were of either African American or Hispanic descent. Of the 10 patients with reported ages, the median age was 35.5 years (range 3 weeks – 61 years). 5 patients had a previous diagnosis of coccidioidomycosis and only 3 had an immunocompromising condition. These comprised pregnancy, heart transplant, and juvenile inflammatory arthritis. Three cases had multi-valvular involvement, but the majority affected the mitral (5) and the aortic (4) valves. Only 2 of the 11 cases involved a prosthetic valve. Of the 8 cases with reported blood cultures, only 2 were positive. The majority affected the mitral (5) and the aortic (4) valves. Only 2 of the 11 cases involved a prosthetic valve. Of the 8 cases with reported blood cultures, only 2 were positive.
Conclusion. These data support the importance of the guidelines’ criteria for cardiac surgery in the management of IE. Assuming that only 1/3 of the surgery needing cases received surgery, more interventions are needed to decrease the barriers against surgery.
Disclosures. All Authors: No reported disclosures

693. Performance of ICD Code Versus Discharge Summary based Query for Endocarditis Cohort Identification
H. Nina Kim, MD, MS; Ayushi Gupta, MS MBA; Kristine E. Lan, M.S.; Jennel C. Stewart, DO, MPH; Shireesa Dhanireddy, MD; Maria A. Corcoran, MD, MPH; University of Washington, Seattle, WA
Session: P-32. Endocarditis
Background. Studies on infective endocarditis (IE) have relied on International Classification of Diseases (ICD) codes to identify cases but few have validated this method which may be prone to misclassification. Examination of clinical narrative data could offer greater accuracy and richness.
Methods. We evaluated two algorithms for IE identification from 7/1/2015 to 7/31/2019. (1) a standard query of ICD codes for IE (ICD-9: 424.9, 424.91, 424.99, 421.0, 421.1, 421.9, 112.81, 036.42 and ICD-10: I38, I39, I33, I33.9, B37.6 and A39.51) with or without procedure codes for echocardiogram (93300-93356) and (2) a key word, pattern-based text query of discharge summaries (DS) that selected on the term "endocarditis" in fields headed by "Discharge Diagnosis" or "Admission Diagnosis" or similar. Further coding extracted the nature and type of valve and the organism responsible for the IE if present in DS. All identified cases were chart reviewed using pre-specified criteria for true IE. Positive predictive value (PPV) was calculated as the total number of verified cases over the algorithm-selected cases. Sensitivity was the total number of algorithm-matched cases over a final list of 166 independently identified true IE cases from ID and Cardiology services. Specificity was defined using 119 pre-adjudicated non-cases minus the number of algorithm-matched cases over 119.
Results. The ICD-based query identified 612 individuals from July 2015 to July 2019 who had a hospital billing code for infective endocarditis; of these, 534 also had an echocardiogram. The DS query identified 387 cases. PPV for the DS query was 94.5% (95% confidence interval [CI] 80.6%, 87.8%) compared with 72.4% (95% CI 68.7%, 75.8%) for ICD only and 75.8% (95% CI 72.0%, 79.3%) for ICD + echo queries. Sensitivity was 75.9% for the DS query and 86.8–93.4% for the ICD queries. Specificity was high for all queries >94%. The DS query also yielded valve data (prothetic, tricuspid, pulmonic, aortic or mitral) in 60% and microbiologic data in 73% of identified cases with an accuracy of 94% and 90% respectively when assessed by chart review.
Conclusion. Compared to traditional ICD-based queries, text-based queries of discharge summaries have the potential to improve precision of IE case ascertainment and extract key clinical variables.
Disclosures. All Authors: No reported disclosures

694. Prediction Tool for Infective Endocarditis in Beta-hemolytic Streptococcal Bacteremia
Ryo Hasegawa, MD2; Takahiro Matsuo, MD; Osamu Takahashi, MD, PhD; Nobuyoshi Mori, MD; St Luke’s International Hospital, Chuo City, Tokyo, Japan; St. Luke’s International Hospital, Tokyo, Japan
Session: P-32. Endocarditis
Background. Although beta-hemolytic streptococci (BHS) is a rare causative pathogen of infective endocarditis (IE), it is a serious condition and it is important to predict IE in BHS bacteremia (BHS-IE). The purpose of this study was to develop a predictive score for BHS-IE.
Methods. We conducted a retrospective study comparing the clinical features of BHS-IE and BHS-non-infective endocarditis (BHS-NIE) in adult patients with BHS bacteremia at a 520-bed tertiary hospital in Tokyo, Japan from 2004 to 2020. IE was diagnosed according to modified Duke’s criteria, and both “Definite” and “Possible” were included. Univariate and multivariable analyses were conducted using logistic regression.
Results. Among 250 patients with BHS bacteremia, 47 (19%) were diagnosed with BHS-IE. The median (IQR) patient age was 71 (59, 84) years and 121 (68%) were male. The proportions of A, B, C/G groups were 14%, 38%, and 47.6%, respectively. Five predictors, either independently associated with BHS-IE or clinically relevant, were used to develop the prediction score: C-reactive protein ≥ 10 mg/dl (2 points); Group B Streptococcus (1 point); Auscultation of heart murmur (1 point); Platelet count < 150 x10^9 /µl (1 point); and Hypotension (systolic blood pressure < 90 mmHg or on vasopressor) (1 point). In a receiver operating characteristic analysis, the area under the curve was not significantly different from that of the BHS-IE model (OR: 95% CI).
Conclusion. Compared to traditional ICD-based queries, text-based queries of discharge summaries have the potential to improve precision of IE case ascertainment and extract key clinical variables.
Disclosures. All Authors: No reported disclosures

Table 1. Test Characteristics of Three Electronic Health Record Queries for Infective Endocarditis

| Variable | Non-endocarditis (n=328) | IE (n=119) | Sensitivity | Specificity | Positive Predictive Value |
|----------|--------------------------|------------|-------------|-------------|--------------------------|
| Age (yr) | 53.9±14.7                | 56.3±16.0  | 88.0%       | 72.4%       | 72.4% (443/612)          |
| Echocardiogram | 13 (10.0%) | 10 (8.4%) | 75.8% | 86.8% | 94.5% (112/119) |
| Heart valve replacement | 2 (1.5%) | 1 (0.8%) | 50.0% | 100.0% | 100.0% |
| Platelet count < 150 x10^9 /µl | 8 (6.1%) | 7 (5.9%) | 68.8% | 95.1% | 96.1% (112/119) |
| Mean platelet volume ≥ 100 f | 4 (3.1%) | 3 (2.5%) | 75.0% | 91.1% | 91.1% (112/119) |
| Mean corpuscular volume ≥ 95 f | 7 (5.5%) | 6 (5.1%) | 75.0% | 91.1% | 91.1% (112/119) |
| Mean corpuscular hemoglobin ≥ 30 pg | 9 (7.0%) | 8 (6.7%) | 75.0% | 91.1% | 91.1% (112/119) |
| Mean corpuscular hemoglobin concentration ≥ 100 g/L | 6 (4.7%) | 5 (4.2%) | 75.0% | 91.1% | 91.1% (112/119) |
| Mean platelet volume ≥ 100 f | 4 (3.1%) | 3 (2.5%) | 75.0% | 91.1% | 91.1% (112/119) |
| Mean corpuscular volume ≥ 95 f | 7 (5.5%) | 6 (5.1%) | 75.0% | 91.1% | 91.1% (112/119) |
| Mean corpuscular hemoglobin ≥ 30 pg | 9 (7.0%) | 8 (6.7%) | 75.0% | 91.1% | 91.1% (112/119) |
| Mean corpuscular hemoglobin concentration ≥ 100 g/L | 6 (4.7%) | 5 (4.2%) | 75.0% | 91.1% | 91.1% (112/119) |

Table 1. Comparison of basic characteristics of patients in the two operated / unoperated cohorts.

| Variable | Operated (n=10) | Unoperated (n=26) | p-value |
|----------|-----------------|-------------------|---------|
| Age (yr) | 36.2±15.7       | 56.3±16.0         | 0.001   |
| Echocardiogram | 13 (100%) | 10 (38.5%) | 0.002   |
| Heart valve replacement | 2 (20.0%) | 1 (3.8%) | 0.034   |
| Platelet count < 150 x10^9 /µl | 8 (80.0%) | 7 (27.0%) | 0.001   |

Table 1. Comparison of basic characteristics of patients in the two operated / unoperated cohorts.