patients (29%) were married or partnered compared to High SPR patients (14%; p=0.04). There was no difference in self-reported condom use (≥50% of the time) between Low (63%) and High (72%) SPR patients (p=0.28) and documented history of sexually transmitted infections was similarly high in both groups (>70%; p=0.85). Previous HIV pre-exposure prophylaxis (PrEP) use was uncommon in both Low SPR (8%) and High SPR (6%) groups.

For the evaluation of CR by DHRS (Table 2), both Low and High SPR groups had median scores in the very high risk category (≥50 points) with similar results by test component.

**Conclusion.** USAF members with incident HIV infection more commonly identified with low SPR despite similar risk behaviors and CRs as high SPR patients. The development of patient education programs and promotion of HIV prevention services including PrEP are needed to reduce incident HIV cases in the USAF. Validated HIV risk calculators like the DHRS may also assist medical providers in identifying candidates for HIV prevention services.

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**55. Infective Endocarditis After Surgical or Transcatheter Aortic Valve Replacement**

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**Session:** O-12. Endocarditis

**Background.** Infective endocarditis (IE) can complicate both surgical aortic valve replacement (SAVR) and transcatheter aortic valve implantation (TAVI) with significant morbidity and mortality despite differing pathogenesis. In the presence of limited data from direct comparison studies and recent expansion of TAVI to younger and lower-risk patients, we compared the incidence and timing of IE in TAVI versus SAVR.

**Methods.** Using data from the TriNetX electronic health records network, we identified (1) a cohort of patients who underwent TAVI between January 2016 and December 2020 (CPT procedure code 1021150) and (2) a propensity score-matched cohort of patients who underwent SAVR (CPT procedure codes 1035167 or 1029693, without any associated transcatheter procedure). We examined the incidence of IE (captured with ICD-10 codes I33, I38, or I39) over a 5-year follow up period and matched the cohorts for demographic data and clinically relevant background history. We used Kaplan-Meier estimates and Cox proportional hazards models to compare incidence between matched cohorts.

**Results.** We identified 6,302 patients with TAVI and 6,302 matched patients with SAVR. The baseline characteristics of the cohorts were well balanced, Table 1. All standardized mean differences were < 0.05, indicating adequate matching between cohorts. The Kaplan-Meier mortality at 5 years was 38.0% in the TAVI vs. 22.0% in the SAVR cohort (log-rank P < 0.001). There were 290 cases with IE in the TAVI and 604 cases in the SAVR cohort. The corresponding 5-year event rates were 10.0% vs. 16.9% (log-rank P < 0.001), respectively, Figure 1. The risk ratio of TAVI vs. SAVR related IE over the entire 5-year period was 0.48 (95%CI 0.42 — 0.55; P < 0.001). However, the relative risk for IE was non-proportional between groups over the 5-year period, with an early pronounced incidence among SAVR relative to TAVI patients and gradual convergence of the hazard rates over time, Figure 2.

**Figure 1. Cumulative 5-Year Incidence (Kaplan-Meier Estimates) of Infective Endocarditis Among Matched Transcatheter Aortic Valve Implantation (TAVI) vs. Surgical Aortic Valve Replacement (SAVR) Recipients**

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**Table 1. Baseline Patient Characteristics of Patients of Transcatheter Aortic Valve Implantation (TAVI) vs. Surgical Aortic Valve Replacement (SAVR) After Matching**

| Characteristic | TAVI (N=6,302) | SAVR (N=6,302) | SMD |
|---------------|---------------|---------------|-----|
| Demographics  |               |               |     |
| Age (mean ± SD), years | 74.3 ± 9.3 | 73.4 ± 8.6 | 0.0005 |
| Male, N (%) | 4055 (64.3) | 4555 (64.3) | 0.0005 |
| Race/Ethnicity, N (%) |               |               |     |
| White | 5611 (80.3) | 5656 (80.7) | 0.0088 |
| Not Hispanic or Latino | 5091 (80.3) | 5083 (80.7) | 0.0088 |
| Black or African American | 322 (5.1) | 323 (5.1) | 0.0077 |
| Past Medical History, N (%) |               |               |     |
| Hypertension | 4440 (70.2) | 4446 (70.5) | 0.0017 |
| Diabetes mellitus | 1631 (26.0) | 1636 (26.0) | 0.0038 |
| Dyslipidemia | 3710 (58.9) | 3725 (59.5) | 0.0136 |
| Obesity | 1482 (23.5) | 1454 (23.1) | 0.0105 |
| Heart failure | 2209 (35.9) | 2085 (35.7) | 0.0217 |
| Congestive heart failure | 1000 (29.8) | 1000 (29.8) | 0.0099 |
| Atrial fibrillation and flutter | 1808 (29.0) | 1808 (29.0) | 0.0076 |
| Non-rheumatic mitral valve disease | 1622 (25.7) | 1639 (25.0) | 0.0062 |
| Rheumatic heart disease | 1552 (24.0) | 1569 (24.9) | 0.0059 |
| Aortic and chronic kidney disease | 1500 (24.0) | 1563 (25.8) | 0.0077 |
| Chronic lower respiratory disease | 1544 (24.5) | 1564 (24.8) | 0.0074 |
| Intestinal lung disease | 552 (8.9) | 562 (9.3) | 0.0106 |
| Pulmonary hypertension and pulmonary embolism | 1138 (18.1) | 1157 (19.2) | 0.0241 |
| Congenital heart disease | 516 (14.5) | 562 (15.6) | 0.0262 |
| Atherosclerosis and aortic disease | 2236 (35.9) | 2406 (38.2) | 0.0262 |
| Venous thrombosis | 660 (10.9) | 649 (10.6) | 0.0030 |
| Liver disease | 566 (9.0) | 570 (9.0) | 0.0022 |
| Neoplasms | 1645 (25.1) | 1563 (25.8) | 0.0091 |
| Previous cardiac surgery | 392 (6.0) | 386 (6.0) | 0.0099 |
| Pacemaker | 314 (5.0) | 324 (5.1) | 0.0072 |
| Implantable cardioverter defibrillator | 116 (1.9) | 121 (1.9) | 0.0035 |
| Previous history of endocarditis | 114 (1.8) | 158 (2.5) | 0.0081 |

**Table 2: Denver HIV Risk Scores of Active Duty Air Force Members with Incident HIV Infection**

| Point Value | Low Self Perceived Risk (N=397) | High Self Perceived Risk (N=49) |
|-------------|----------------------------------|---------------------------------|
| Denver HIV Risk Scores, median* | 31 (38-57) | 35 (49-69) |
| Age (<2 or ≥60) | 0 | 12 (14) |
| 22-55 or ≥56-64 | 24 | 34 (8) |
| 36-55 or ≥55-64 | 30 | 31 (40) |
| Gender | 17 | 15 (15) |
| Male | 21 | 67 (69) |
| Race/Ethnicity | 9 | 38 (40) |
| Black | 11 | 11 (11) |
| Other | 13 | 12 (13) |
| White | 36 | 46 (49) |
| Sexual Practices | 22 | 64 (82) |
| Sex with Male | 10 | 36 (46) |
| Receptive Anal Intercourse | 8 | 63 (81) |

**Figure 2. Log-Rank (Kaplan-Meier) Test of TAVI vs. SAVR (log-rank P < 0.001)**

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**Conclusion.** The incidence of IE among TAVI patients was lower than that among SAVR patients, but the risk remained higher among TAVI patients for the first year following TAVI. The rate of IE after TAVI was less than that after SAVR. The risk was non-proportional between groups over the 5-year period, with an early pronounced incidence among SAVR relative to TAVI patients and gradual convergence of the hazard rates over time. The use of validated HIV risk calculators like the DHRS may also assist medical providers in identifying candidates for HIV prevention services.
Conclusion. In this comparative study, the risk for IE was lower among TAVI vs. SAVR recipients, primarily due to the higher risk of IE during the early post-SAVR period. With increasing uptake of TAVI procedures, a better understanding of the temporal occurrence and pathophysiology of IE and application of effective treatment strategies in these patients is required.

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56. Long-Term Cardiovascular Outcomes After Drug-Related vs Non-Drug-Related Infective Endocarditis
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Session: O-12. Endocarditis

Background. Drug use-related infective endocarditis (IE) has nearly doubled in the past two decades in the United States, largely due to the current opioid crisis. Although there are robust data on surgical outcomes for people who use drugs (PWUD) vs. non-PWUD patients after an initial encounter for IE, long-term comparative data on post-IE outcomes are relatively sparse.

Methods. Using data from the TriNetX electronic health records network, we identified (1) a cohort of patients 16 to 64 years old who had a first encounter for IE (captured with ICD-10 codes I33, I38, or I39) and history of drug use (captured with ICD-10 codes F11, F13-F16, F18, F19, O99.32, or T40) preceding the IE episode and (2) a propensity score-matched cohort of patients age 16-64 who had a first episode of IE and no documented drug use. We compared the post-IE incidence of (1) mortality; (2) ischemic stroke; (3) intracranial hemorrhage; (4) myocardial infarction; (5) heart failure; and (6) sudden cardiac death (cardiac arrest or ventricular fibrillation or tachycardia) between the 2 cohorts over a 5-year follow up period. We matched the cohorts for demographic data and clinically relevant medical history. We used Kaplan-Meier estimates and Cox models to compare incidence.

Results. We identified 6,578 PWUD patients and 6,578 matched non-PWUD patients 16-64 years old with a first episode of IE. The baseline characteristics are summarized in Table 1. Standardized mean differences of characteristics were generally < 0.1, indicating adequate matching. The 5-year Kaplan-Meier rates of outcomes of interest are summarized in Table 2. Mortality did not differ between cohorts. However, the incidence of ischemic stroke and intracranial hemorrhage was consistently higher among PWUD throughout the 5-year follow-up. Rates of myocardial infarction were also higher among PWUD; however, the difference was more pronounced later during follow-up. Rates of heart failure and sudden cardiac death did not differ.

Table 1. Baseline Characteristics According to Drug Use Status in the Matched Cohorts

| Characteristic       | PWUD (N=6,578) | Non-PWUD (N=6,578) | P-value |
|----------------------|----------------|--------------------|---------|
| Demographics         |                |                    |         |
| Mean age (SD), years | 40.9 ± 11.5    | 41.5 ± 13.5        | 0.046   |
| Male, N(%)           | 3480 (52.6)    | 3482 (52.8)        | 0.001   |
| Pregnancy            | 440 (6.7)      | 473 (7.3)          | 0.229   |
| Race/Ethnicity, N(%) |                |                    |         |
| White                | 4815 (73.1)    | 4823 (73.8)        | 0.007   |
| Non-Hispanic or Latino| 4115 (62.7)    | 4445 (66.7)        | 0.015   |
| Black or African American | 1204 (18.4)    | 1329 (20.3)        | 0.017   |
| Body mass index      |                |                    |         |
| <30 kg/m²            | 1758 (26.9)    | 1757 (26.9)        | 0.935   |
| 26-30 kg/m²          | 1731 (26.0)    | 1645 (25.3)        | 0.233   |
| >30 kg/m²            | 1732 (26.9)    | 1430 (21.7)        | 0.056   |

Table 2. Estimated 5-Year Mortality and Incidence of Cardiovascular Complications After a First Encounter of Infective Endocarditis Among Matched PWUD vs. non-PWUD Patients

| Outcome                        | PWUD (N=6,578) | Non-PWUD (N=6,578) | P-value |
|--------------------------------|----------------|--------------------|---------|
| 5-Year KM Estimate            |                |                    |         |
| Death                          | 23.4%          | 23.5%              | 0.98 (0.89-1.07) | 0.646  |
| Stroke                         | 14.9%          | 13.1%              | 1.29 (1.15-1.45) | <0.001 |
| IC                             | 6.5%           | 3.6%               | 1.47 (1.21-1.78) | <0.001 |
| MI                             | 14.0%          | 10.9%              | 1.17 (1.03-1.33) | 0.015  |
| HF                             | 33.5%          | 31.6%              | 1.02 (0.95-1.10) | 0.548  |
| SCD                            | 13.6%          | 12.2%              | 1.04 (0.92-1.27) | 0.509  |

*PWUD: people who use drugs; HF: heart failure; CI: confidence interval; IC: Kaplan-Meier; IC: intracranial hemorrhage; MI: myocardial infarction; HF: heart failure; SCD: sudden cardiac death

Conclusion. Cardiovascular events after IE were common among both PWUD and non-PWUD patients over a 5-year follow-up period. However, rates of ischemic...