

Evaluation of Surgical Site Infections after Change in Surgical Prophylaxis in Ventricular Assist Device Patients

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Background

- Current guidelines for antimicrobial surgical prophylaxis in ventricular assist device (VAD) patients recommend single-agent cefazolin for either single dose or <24 hr continuation¹
- In the clinical setting, prophylaxis choices for VAD patients historically included broader spectrum agents due to high morbidity and mortality associated with VAD infections^{2,3}
- At the University of Maryland, antibiotic choice for surgical prophylaxis in VAD patients historically included broad gram-positive and gram-negative (including *Pseudomonas*) coverage, often vancomycin/piperacillin-tazobactam, for prolonged periods – increasing risk of antimicrobial resistance
- In Oct. 2013, UMMC established standardized prophylaxis protocol for VAD patients: **vancomycin + ceftriaxone for 72 hrs**

Objective

- To evaluate rate of surgical site infection (SSI) in VAD patients after implementation of this protocol

Methods

- Retrospective cohort study of all patients who had a ventricular assist device placed at one academic center in Baltimore, Maryland before protocol change (1/1/2011-10/1/2013) and after (10/1/2013-11/15/2015)
- Demographic and clinical data was extracted from electronic medical records
- Fisher's exact test used for comparison of SSI rates

Key Finding

Narrowing the spectrum of antimicrobial agents for surgical prophylaxis in VAD patients **did not lead to increase in SSI rates**

Results

Association of VAD Surgical Prophylaxis Intervention with SSI Rates

	Pre-intervention (N=75)	Post-intervention (N=46)	P-value
SSI	67 (55.4%)	45 (37.2%)	0.15
No SSI (N=9)	8 (6.6%)	1 (0.8%)	

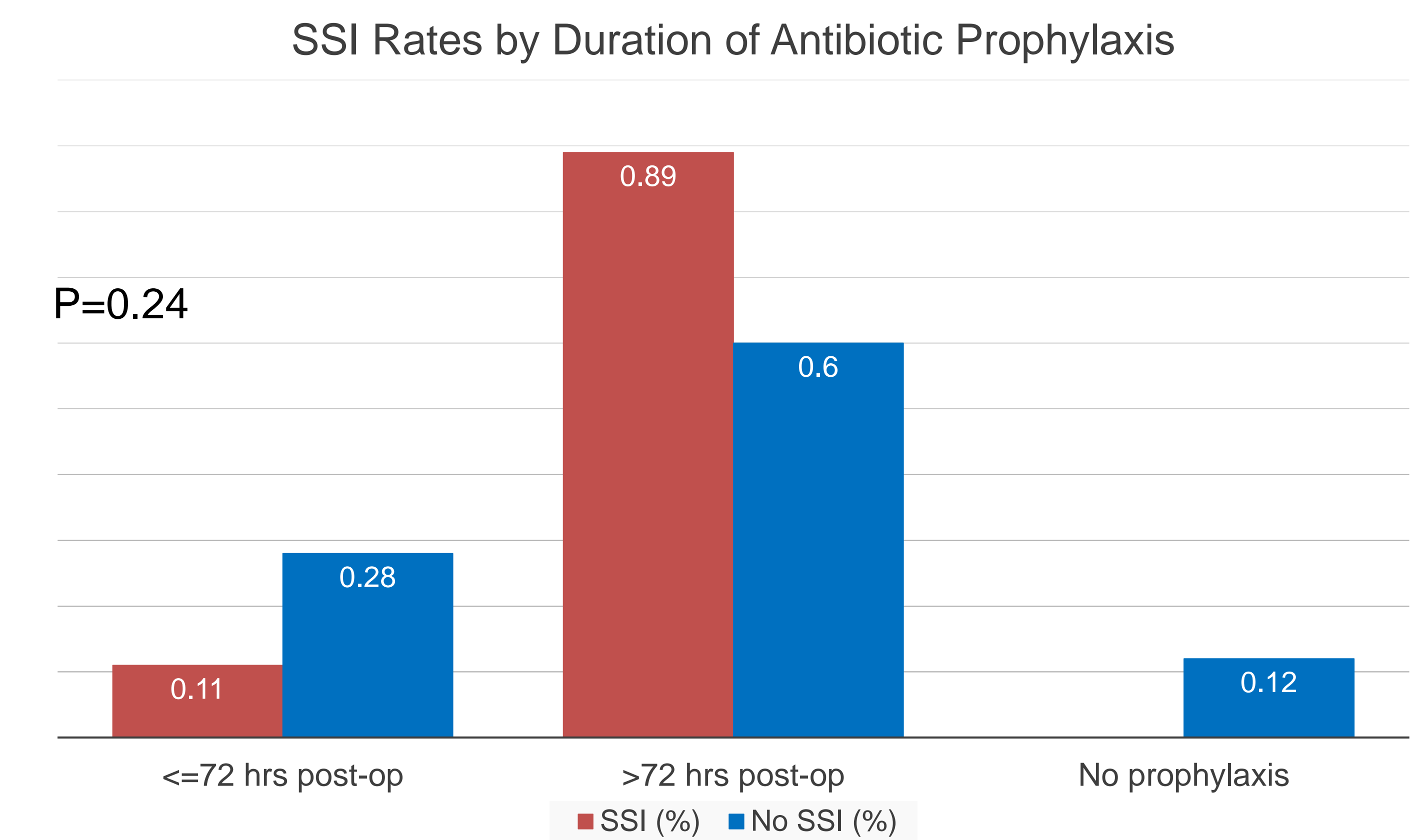
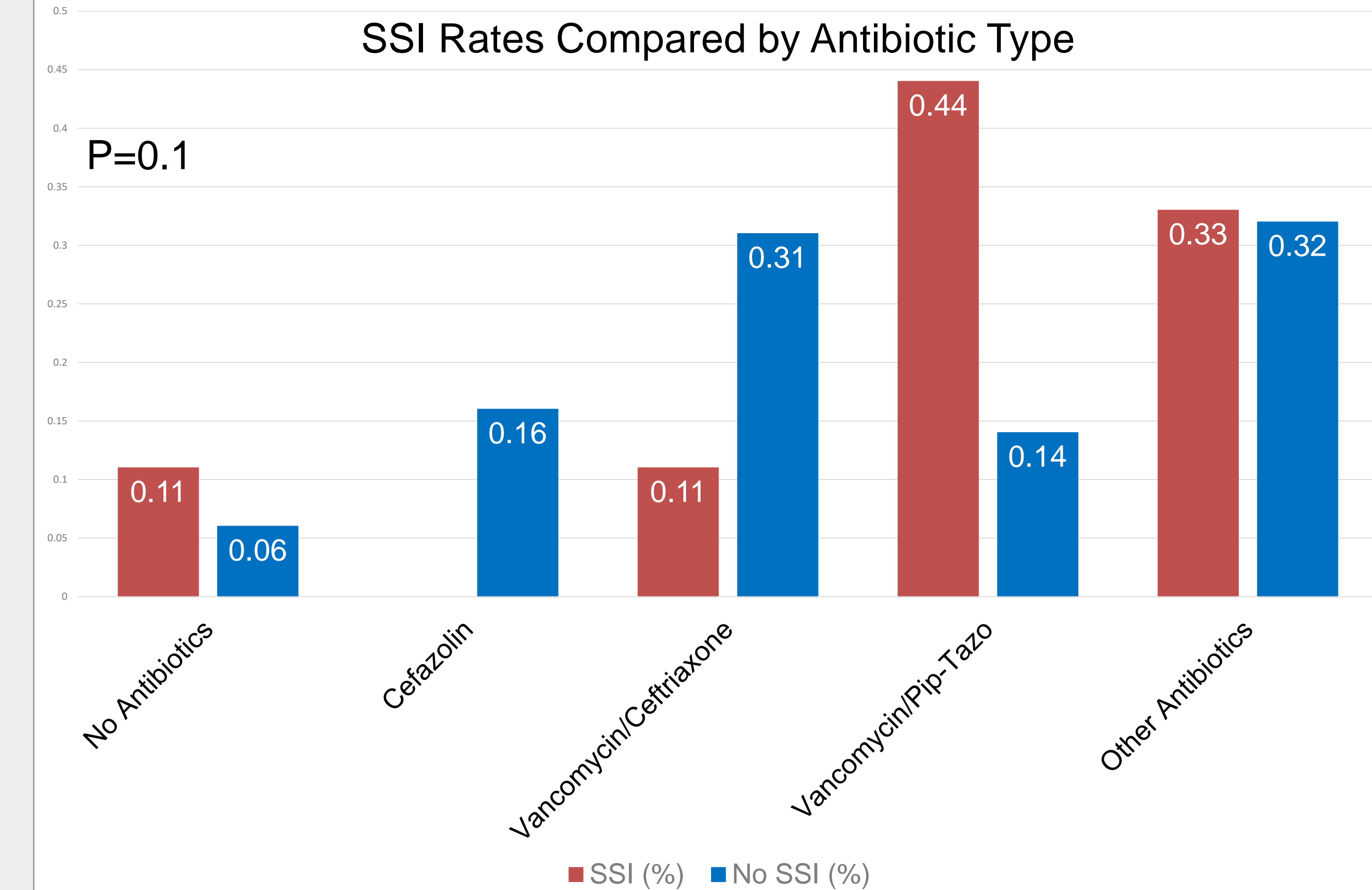
Protocol Adherence

- Pre-intervention: 0% adherence (0/75)
- Post-intervention: 8.7% adherence (4/46)

Discussion

- Protocol adherence limited by confounding indications for antibiotics in VAD population (active infection, colonization)
- Additionally, small sample size (n=121) and low event rate (n=9) impaired identification of SSI risk factors
- Nevertheless, this study supports safety and encourages further study of antimicrobial stewardship in surgical prophylaxis choices

Results, cont.



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