Presentation: **2428**

Ascension St. John Hospital

Lower Rates of Antibiotic Treatment of Vancomycin-Resistant Compared to Vancomycin-Susceptible Enterococcal Bacteriuria

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Introduction

- According to the IDSA guidelines, most asymptomatic bacteriuria should not be treated.
- Identification of drug resistance often leads to inappropriate antibiotic prescribing.
- Screening for vancomycin-resistance among enterococcal urine isolates is performed at some institutions for infection control purposes.
- We evaluated prescribing patterns of vancomycin-resistant enterococci (VRE) and vancomycin-susceptible enterococci (VSE) at a regional health system to determine if identification of vancomycin resistance results in increased rates of therapy.

Methods

- **Design:** Multicenter retrospective chart review project.
- **Inclusion:** All adult inpatients at the Ascension St. John Providence Health System with positive urine culture identified as VRE or VSE between 4/1/17-10/1/17.
- **Exclusion:** Patients with medical records that were unavailable.
- **Matching:** Groups were matched to hospital location, age within 5 years and gender.
- **Definition:** Bacteriuria was defined as a UTI with fever or concomitant enterococcal bacteremia.
- **Data collection:**
  - Demographics (age, sex)
  - Location of patient (institution)
  - ID consult
  - Fever, other localized symptoms
  - Results of blood cultures (if performed)
  - Treatment (antibiotic class and the duration of treatment)
- We evaluated frequency of treatment as well as type and duration of antibiotics.

Statistical Methods

- Descriptive statistics used to characterize the study population.
- Continuous variables described as the mean ± SD or median with range.
- Categorical variables described as frequency distributions.

The project was approved by Ascension St John Institutional Review Board

Results

Figure 1. **Study Subjects**

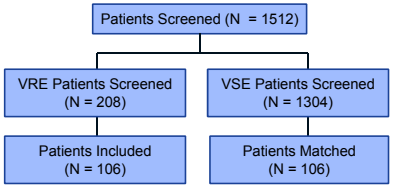


Table 1. **Patient Characteristics**

	VRE +	VSE+
Age (years)	70.4	71.3
Gender (% Male)	35.8	35.8
VRE (+) Blood Cultures	2	3
Fever within 48 hours	23	15
PCN allergy	24	21
ID consult (%)	89	62

Table 2. **Number of Patients with VRE/VSE by Institution**

Site	Included	Fever	VRE/VSE + BCx	Median length of Rx (days)
Hospital 1	22/22	8/4	2/2	7/14.5
Hospital 2	47/47	8/5	0/0	7/7
Hospital 3	5/5	2/0	0/0	7/13
Hospital 4	22/22	3/3	0/1	7/7
Hospital 5	10/10	2/3	0/0	6.5/8.5
Total	106/106	23/15 (p=0.21)	2/3	7/7

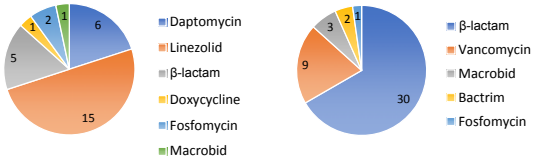


Figure 4. **Per**

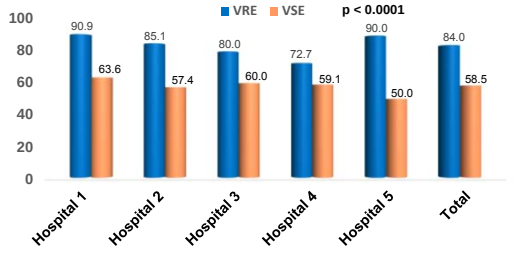
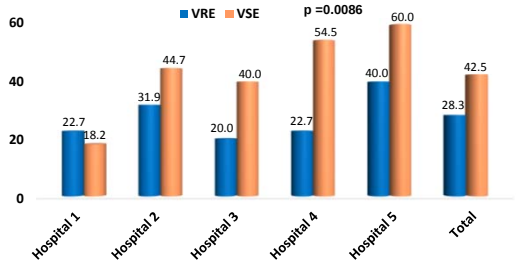


Figure 5. **Percent Treated**



Summary

- There was wide variability among institutions in the frequency of treatment of enterococcal bacteriuria.
- Choice of VRE treatment differed by institution.
  - Hospital 2 had a total of 15 VRE cases treated; 11 of which were treated with linezolid.
- Choice of therapy for VSE was similar between institutions with either a β-lactam or vancomycin being utilized.
- ID consults were higher in the VRE group compared to the VSE group.

Conclusions

- The rates of treatment were higher with the VSE group compared to the VRE group.
- Identification of vancomycin resistance didn't lead to increased antibiotic utilization.
- ID was more frequently consulted in patients with VRE and those patients were treated less frequently.

Limitations

- Retrospective chart review
- Limited sample size

Future Directions

- The Antimicrobial Stewardship Committee needs to help develop policies that would restrict the use of inappropriate therapies, such as treatment of asymptomatic bacteruria.

References

1. Heintz BH, Halilovic J, Christensen CL. Vancomyin-resistant enterococcal urinary tract infections. Pharmacotherapy. 2010; 30(11): 1136-1149.
2. Hooton TM, Bradley SF, Cardenas DD, et al. Diagnosis, prevention, and treatment of catheter-associated urinary tract infection in adults: 2009 internal clinical practice guidelines from the infectious diseases society of America. Clin Infect Dis. 2010 Mar 1;50(5):625-63.