YALE-NEW HAVEN TRANSPLANTATION CENTER

Outcomes of Daptomycin Prophylaxis in Liver Transplant Recipients with Vancomycin-Resistant Enterococcus Colonization

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BACKGROUND

ycin-resistant enterococcus [VRE] has become a significant nosocomial pathogen he immunocompromised population, including solid-organ transplant patients[1]. nsplant candidates are at risk for VRE colonization due to prolonged periods of zation, exposure to broad spectrum antibiotics, and need for renal replacement

et al. has demonstrated that VRE colonization in liver transplant candidates and splant recipients leads to a 3-fold risk of developing a VRE infection. VRE infection iated with increased length of hospital stay, organ dysfunction, and biliary tions[2,3]. Furthermore, the data suggests VRE colonization is associated with a 2-eased risk of mortality. The objective of this study is to assess whether obial prophylaxis against VRE mitigates this mortality risk. The study hypothesis is ative prophylaxis with daptomycin will decrease the risk of infection and mortality olonized liver transplant recipients.

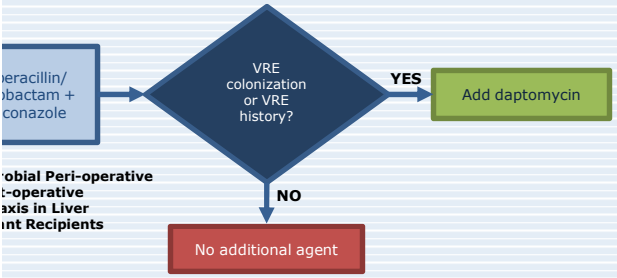
OBJECTIVES

outcomes (at 28 days)
f VRE infection
l bacterial infection rate
ity rate

Secondary outcomes (at 6 months)
- VRE infection rate
- Mortality rate
- Graft loss

METHODS

ective chart review of adult liver transplant recipients between July 2008 through 11 was performed. VRE positivity was defined as VRE isolated from a clinical gy specimen or active surveillance via a peri-rectal swab. VRE negative was having a negative result on peri-rectal swab or if there was no history of VRE rom a clinical microbiological specimen. The VRE positive cohort received n (6mg/kg) prior to incision and continued for 48 hours post transplant in addition d anti-infective prophylaxis. The VRE negative cohort did not receive antimicrobial rgeted against VRE.



RESULTS

Baseline Characteristics

Table 1: Patient Characteristics

	VRE Positive (n=31)	VRE Negative (n=59)	P Value
Mean age, yrs	53	50	0.37
Average MELD score	33	24	<0.01
Hepatitis C Infection	19 (61%)	20 (34%)	0.02
Multi-organ transplant	9 (29%)	7 (11%)	0.08
Living Donor	3 (10%)	10 (16%)	0.53
Deceased Donor	28 (90%)	51 (84%)	0.84
MRSA Colonization	2 (6%)	2 (3%)	0.89
Induction Type			
Thymoglobulin	0 (0%)	1 (1.6%)	0.46
Basiliximab/ Daclizumab	31 (100%)	58 (97%)	0.46

Outcomes

Table 2: Primary and Secondary Outcomes Per 100 Patient Days

Outcome	VRE Positive	VRE Negative	P value
At 28 Days	*(n=31)*	*(n=59)*	
Rate of VRE infection	2 (0.23%)	0 (0%)	0.21
Overall bacterial infection	7 (0.8%)	4 (0.29%)	0.10
Mortality at 28 days	0	1	0.80
At 6 Months			
Rate of VRE infection	2 (0.04%)	0 (0%)	0.19
Mortality at 6 months	0	1	0.82
Graft loss at 6 months	0	3*	0.55

*2 patients with primary graft non-function, 1 patient had graft failure due to hepatocyte calcification

Outcomes

Characteristics of VRE Infection
- VRE positive group: 2 infections
  - 1 patient had a spontaneous bacterial peritonitis, with VRE growing out of the ascitic fluid (PMN count ≥ than 250 cells/mm^3)
  - 1 patient had VRE grow from an abdominal abscess, peritoneal fluid, and pleural fluid

Overall Infections (Figure 1)
- There was no statistically significant differences between the groups in overall rate of infection

ICU Length of Stay (LOS)
- VRE positive group, mean: 5.2 days (range
- VRE negative group, mean: 4.5 days (range

Overall Length of Hospital Stay (Post-tran
- VRE positive group, mean: 17.6 days (rang
- VRE negative group, mean: 14.0 days (rang

Characteristics of Mortalities
- VRE negative group: 1 death
  - 1 patient had acute bowel ischemia for u reasons

Figure 1a: Isolates of All Infections from VRE Positive Group

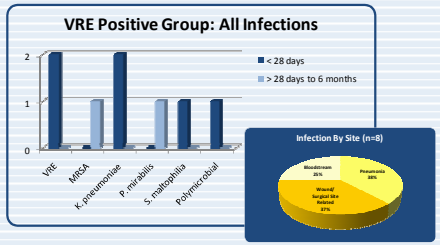
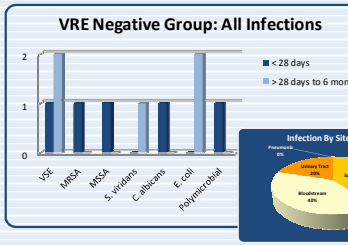


Figure 1b: Isolates of All Infections from VRE Positive Gr



CONCLUSIONS

1. Targeted antimicrobial prophylaxis against VRE with daptomycin may improve morbidity and morta VRE colonized liver transplant recipients contrary to prior findings in VRE colonized patients.
2. The incidence of VRE infection post transplant was low in the VRE colonized cohort and such infe were limited to the initial 28 days post transplant.
3. A comparative study with a larger sample size of VRE colonized patients who receive daptomycin operative prophylaxis versus no VRE specific prophylaxis would be required to confirm our findings.

REFERENCES

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