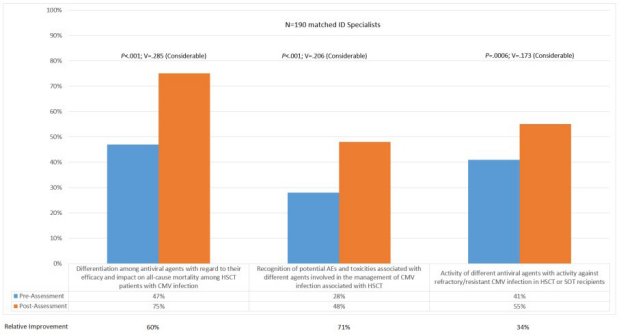

Methods: This study assessed the ability of digital education to improve the ability of ID specialists to make evidence-based recommendations for CMV management in HSCT recipients. A CME/ABIM MOC educational program featuring interactive discussion between two ID faculty was developed and launched on 12/12/19, on a website dedicated to continuous professional development. Educational effectiveness was assessed with a repeated-pairs pre-/post-assessment study design; each individual served as his/her own control. A chi-square test assessed changes pre- to post-assessment. *P* values < 0.05 are statistically significant. Effect sizes were evaluated using Cramer's V (< 0.05 modest; 0.06–0.15 noticeable effect; 0.16–0.26 considerable effect; > 0.26 extensive effect). Data for this matched-learner analysis were collected through 04/14/20.

Results: To date, 3315 HCPs (2891 physicians; 162 nurses/NPs) have participated in the activity. Data from the subset of ID specialists (n=190) who answered all pre-/post-assessment questions during the initial study period were analyzed. Following activity participation, significant improvements were observed in the proportion of ID specialists who answered all assessment questions correctly (8% pre vs 28% post; *P* < .0001; V=.217). Improvements were also observed in several specific areas of assessment (Figure). Additionally, 65% of ID specialists indicated they planned to modify their patient assessment or treatment approach because of participating in the education.

Conclusion: Participation in this digital educational program significantly improved ID specialists' ability to differentiate among therapeutic options when developing management strategies for HSCT recipients with CMV infection/reactivation. These findings highlight the potential for well-designed online education to positively impact physicians' competence and confidence.

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574. De-escalation of Broad Spectrum Antibiotics during Cytokine Release Syndrome with Haploidentical Hematopoietic Stem Cell Transplantation

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Session: P-22. Care Strategies for Transplant Patients

Background: Fever is a common component of cytokine release syndrome (CRS) occurring in 90% of patients undergoing haploidentical hematopoietic stem cell transplantation (Haplo-HSCT). Fevers typically occur between the stem cell infusion (Day 0) and initiation of post-transplant cyclophosphamide and are often confused with febrile neutropenia (FN). Due to longer time to engraftment in Haplo-HSCT, CRS/FN exposes patients to prolonged courses of empiric broad spectrum antibiotic (BSA) therapy increasing the risk for multi-drug resistant organisms. Recently, at Yale New Haven Health, our practice has changed to now recommend antibiotic de-escalation to prophylaxis after 7 days of BSA if no infection is identified. The objective of this study was to assess the incidence of breakthrough infections with the de-escalation of BSA in CRS/FN. Secondary endpoints include rate of FN, rate of de-escalation, rate of recurrent fevers, duration of BSA, and positive blood culture data.

Methods: The patient population included those undergoing Haplo-HSCT between July 2016 and February 2020 and who developed CRS/FN between Day 0 and Day +5. Patients were excluded if they had prolonged hospitalization due to non-infectious complications or engraftment failure. Bacteremia was defined using NHSN definitions.

Results: Of the 53 Haplo-HSCTs assessed, 43 experienced CRS/FN. Thirty-five Haplo-HSCT (81%) with CRS/FN had negative cultures and 23 (66%) of these were de-escalated back to antibacterial prophylaxis. The median duration of BSA in the de-escalated group was 7 days (range 5–13) compared to 16.5 days range (13–21) in the non-de-escalated group (p< 0.001). Among those de-escalated, 7 (30%) had recurrent fever occurring at a median of 4 days (range 2–14) and were placed back on BSA. Two Haplo-HSCT (9%) that had fever after de-escalation developed a breakthrough bacteremia. No Haplo-HSCT after de-escalation had fever or re-admission for bacteremia 30 days after engraftment. Four Haplo-HSCT (9%) with CRS/FN had positive blood cultures; however, three (7%) were still able to be de-escalated from BSA to narrower agents based on susceptibilities.

Conclusion: De-escalation of BSA in FN/CRS in Haplo-HSCT patients reduced unnecessary, prolonged antibiotic exposure with a low incidence of breakthrough infections.

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575. Effectiveness of Short vs Long Course Perioperative Antibiotics in Lung Transplant Recipients with Donor Positive Respiratory Cultures

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Session: P-22. Care Strategies for Transplant Patients

Background: Lung transplant recipients are at increased risk for infection in the early post-operative phase. Perioperative antibiotic (POA) practices are variable among transplant centers with sparse data regarding optimal antibiotic prophylaxis duration. This study aimed to evaluate the efficacy of short course (SC) (≤10 days) vs long course (LC) (≥11 days) POA in lung transplant patients.

Methods: This was a single-center, retrospective study of non-cystic fibrosis first time lung transplant recipients with donor positive cultures between Aug 2013 and Sept 2019. Patients who died within 14 days of transplant were excluded. Data collected included baseline characteristics, donor and recipient cultures, POA, and hospitalization details. The primary outcome was 30-day recipient freedom from donor-derived respiratory bacterial infection. Secondary outcomes included development of *Clostridioides difficile* infection (CDI), cumulative time on ventilator, post-op time to extubation, in-hospital all-cause mortality, and 30-day development of POA resistance. Descriptive statistics were used for analysis. Continuous variables were compared using the Wilcoxon rank sum test while categorical variables were compared using the chi-square or Fisher's exact test. Statistical significance was defined as p< 0.05.

Results: A total of 147 patients were included (58 SC vs 89 LC). Median POA duration in the SC group was 6.5 days vs 13 days in the LC group (p< 0.0001). The primary outcome of 30-day freedom from donor-derived respiratory infection was present in 56 (97%) patients in the SC vs. 85 (96%) patients in the LC group (p= 1). There was no difference in development of CDI (p = 0.4), mortality (p = 1), or resistant organisms (p=0.28) while cumulative ventilator time and time to post-op extubation were longer in the LC group (p = 0.002 & 0.007, respectively). Methicillin-sensitive *Staphylococcus aureus* was the most common organism isolated from donors in the SC (23, 40%) and LC (48, 54%) groups.

Conclusion: Among lung transplant recipients with positive donor cultures, short course POA was as effective as long course in preventing donor-derived bacterial pneumonia. Further studies are needed to assess heterogeneity in POA practices and optimal duration among transplant centers.

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576. Half-dose Valganciclovir Prophylaxis is Safe and Cost-effective in CMV Seropositive Renal Transplant Recipients

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Session: P-22. Care Strategies for Transplant Patients

Background: Observational studies suggest that half-dose valganciclovir (VGV) prophylaxis (450 mg daily for normal renal function) is as effective as full-dose (900 mg daily) in preventing CMV infection among kidney transplant recipients (KTR). However, this practice is not supported by current guidelines, for fear

of selecting resistance, mainly in high-risk, i.e. donor CMV seropositive/recipient negative (D+/R-) KTR. Full-dose VGV is costly, and possibly associated with higher incidence of neutropenia and BK viremia. Our institution adopted half-dose VGV prophylaxis for R+ KTR in January 2018.

Methods: We included R+ KTR transplanted between 1/1/2014 and 12/31/2018 at our center. Data were censored at 1-year post-transplant, graft loss or death. Primary outcomes were early (< 6 months from transplant) and any CMV viremia. Secondary outcomes were neutropenia, BK viremia, graft loss and death. Categorical variables were compared with χ^2 or Fisher's exact tests, continuous variables with the Mann-Whitney test. We used log-rank and Gray's tests to compare cumulative incidence of outcomes, after adjustment by propensity score for differences in baseline characteristics.

Results: 106 R+ KTR received full-dose and 35 half-dose VGV. Antithymocyte globulin (ATG) induction was associated with significantly higher cumulative incidence of both early (P=0.017) and any (P=0.02) CMV viremia, compared to basiliximab induction (Fig. 1). After adjusting for gender and induction regimen, we noted a signal for higher cumulative incidence of any (P=0.044), but not early (P=0.598) CMV viremia in the full-dose VGV group (Fig. 2). There were no significant differences (P >0.1) in incidence of neutropenia, BK viremia, graft loss or death between the two groups. Cost savings were estimated at $2630 per CMV R+ KTR (Table 1).

Table 1. Comparison of outcomes and cost between the two anti-CMV prophylaxis groups. Data are presented as n (%), unless otherwise indicated.

	Full-dose VGV n=106	Half-dose VGV n=35	P-value[1]	P-value[2]
Early CMV viremia	2 (1.9)	0 (0)	1.000	0.598[a]
CMV viremia	6 (5.7)	0 (0)	0.336	0.044[b]
BKV viremia	24 (22.6)	8 (22.9)	0.978	0.878[c]
Graft loss	7 (6.6)	3 (8.6)	0.709	0.899[d]
Death	4 (3.8)	1 (2.9)	0.799	0.800[e]
ANC nadir (per μL: median, IQR)	2.7 (1.5-3.7)	2.4 (1.3-3.2)	0.167	
Neutropenia (ANC<1,500/μL)	23 (21.7)	10 (28.6)	0.490	
Estimated cost per patient	$5348	$2718		

ANC: Absolute Neutrophil Count
IQR: Interquartile (25^{th}-75^{th} percentile) range
1: Univariate analyses by Mann-Whitney, χ^2 or Fisher's exact test
2: Time-to-event analyses by Gray's or log-rank test
a: Adjusted for gender, induction regimen
b: Adjusted for gender, induction regimen, donor CMV status
c: Adjusted for age
d: Adjusted for donor CMV status
e: Adjusted for induction regimen

Fig 1. Probability of CMV viremia in KTR who received ATG vs. basiliximab induction.

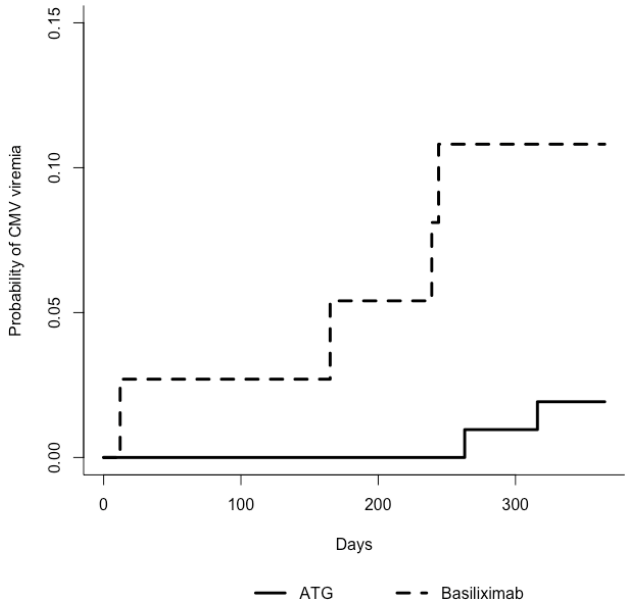
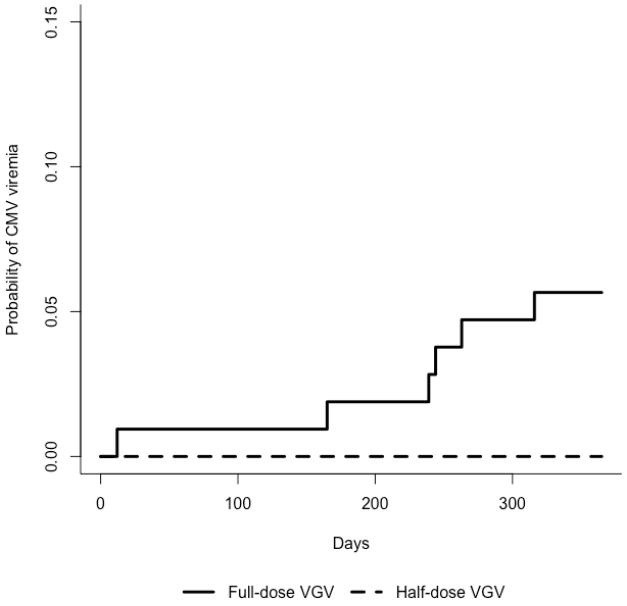


Fig 2. Probability of CMV viremia in KTR who received full-dose vs. half-dose VGV prophylaxis.



Conclusion: In our pilot series, half-dose VGV was at least as effective as full-dose VGV in preventing CMV viremia in R+ RTR, and less costly. If larger scale studies verify generalizability of these results, half-dose VGV may be considered as standard of care for R+ KTR. In KTR, the antimetabolite probably contributes to neutropenia more than VGV prophylaxis.

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577. Incidence and Outcomes of Positive Outpatient Surveillance Blood Cultures in Hematopoietic Stem Cell Transplant (HSCT) Patients with Graft Versus Host Disease (GvHD) On High Dose ≥ 0.5 mg/kg/day (HD) and Low Dose < 0.5mg/kg/day (LD) Steroid Therapy

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Session: P-22. Care Strategies for Transplant Patients

Background: Treatment of GvHD with steroids increases the risk of infection in HSCT patients due to additive immunosuppression and may delay the diagnosis of infection due to lack of symptoms. Outpatient surveillance blood cultures in HSCT with GvHD being treated with HD steroids has demonstrated a blood culture positivity rate of 3.5%. Currently, the utility of surveillance cultures in patients receiving LD steroid therapy is unknown. Our practice includes weekly outpatient surveillance cultures for all GvHD patients treated with steroids regardless of the dose. The primary endpoint of this study was to assess the incidence of positive surveillance blood cultures in GvHD patients receiving HD or LD steroids. Secondary endpoints included number of patients treated, hospitalization, 30 day mortality due to infection, and organisms isolated.

Methods: This was a single-center, retrospective review of GvHD patients at Yale New Haven Hospital between January 2013 and May 2019. Patients were excluded if: lack of signs or symptoms of GvHD, treatment with steroids for any indication other than GvHD, and active GvHD without central line. Cultures from patients receiving antibiotics for concurrent infection were also excluded.

Results: A total of 71 patients met criteria with 901 blood cultures. On HD, eight patients (14%) had 12 positive cultures (4%), and on LD, 16 patients (25%) had 22 positive cultures (4%) (p=0.15). Treatment occurred in six patients (75%) with four (24%) requiring hospitalization on HD, and 12 patients (75%) with 10 (83%) requiring hospitalization on LD (p=0.45). The median duration of steroid therapy was 93 and 236 days with a median dose of steroids of 1mg/kg/day and 0.15mg/kg/day, respectively. The number of positive cultures/1000 steroid days was 1.2 on HD and 0.5 on LD (RR 2.2). 30 day mortality was only noted in one patient (8%) on LD. The most common organism in both groups was Coagulase-negative staphylococci with all six cultures on HD classified as contaminants and 6/10 cultures requiring treatment on LD.

Conclusion: Although the relative risk of positive surveillance blood cultures in HD patients compared to LD was twofold higher, there were clinically significant infections identified in the LD group.

Disclosures: **All Authors**: No reported disclosures