1026. Comparison of Viral Loads in Patients with Co-infections vs. Single-virus Infections
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Background. Molecular testing for respiratory viruses in clinical practice is common, often with multiple viruses detected. Viral load has been correlated with illness severity, but correlation of co-detection of viruses and viral load is less clear. We sought to compare cycle threshold (Ct) values, a marker inversely related to viral load, between single vs. co-detection of common respiratory viruses.

Methods. Children <18 years with respiratory symptoms and/or fever who presented to the ED or were admitted were enrolled. Nasal/throat specimens were obtained and combined. Singleplex qRT-PCR was used to test for 11 respiratory viruses. Clinical and demographic information were collected.

Results. From 11/15/15-7/15/16, 1255 children were enrolled, with median age of 26.5 months, 53.4% male, 54.3% White, 38.7% Black, 6.4% other, and 23.5% Hispanic. The median days of illness were 3 days. Of the total cohort, 904 (72%) tested positive for at least one viral pathogen. Table 1 compares Ct values of single vs. co-detection for each individual virus.

| Table 1. | 
| --- | 
| Viral Load Comparison | 
| **Ct-Median (IQR)** | **p-value** | **Days of Illness** | **Median (IQR)** | **p-value** |
| Respiratory Syncytial Virus (RSV) | Single | 144 | 25.5 (22.86-29.03) | 0.05 | 4 (3-5) | 0.82 |
| RSV-Co-detection | 63 | 270 (23.47-33.82) | 0.001 | 3 (2-7) | 0.002 |
| Human Rhinovirus (HRV) | Single | 289 | 275 (23.79-32.50) | 0.000 | 3 (2-4) | 0.002 |
| HRV-Co-detection | 117 | 32.8 (29.08-35.49) | 0.001 | 3 (2-4) | 0.002 |
| Adenovirus | Single | 79 | 28.7 (23.84-33.62) | 0.001 | 3 (2-4) | 0.002 |
| Adenovirus-Co-detection | 7 | 32.8 (27.40-36.69) | 0.001 | 3 (2-4) | 0.002 |
| Human metapneumovirus (hMPV) | Single | 75 | 28.8 (25.37-32.27) | 0.75 | 3 (2-3) | 0.45 |
| hMPV-Co-detection | 30 | 28.2 (24.86-33.11) | 0.005 | 4 (3-7) | 0.53 |
| Parainfluenza | Single | 36 | 25.2 (23.75-28.76) | 0.005 | 3.5 (2.5-5.5) | 0.34 |
| (PIV) | PIV-Co-detection | 15 | 28.8 (26.04-34.50) | 0.001 | 3 (1-4) | 0.83 |
| Flu-Single | 127 | 26.6 (24.71-30.51) | 0.043 | 3 (2-5) | 0.83 |
| Flu-Co-detection | 26 | 28.0 (25.98-30.14) | 0.05 | 3 (2-5) | 0.83 |

Conclusion. Single detection with RSV, HRV, ADV, and PIV had lower Ct values, indicating higher viral loads, compared with co-detection with other viruses. Additional research is needed to understand the reason for lower viral loads for co-detection vs. single detection in select respiratory viruses.

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1027. Study to Address Threats of Acute Respiratory Infections among Congregate Military Populations (ATARI)
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Background. More than 90% of active duty personnel receive influenza vaccinations yearly. Despite high coverage, influenza-like illnesses (ILI) remain a frequent cause of missed duty and hospitalizations, particularly in U.S. military recruits. More research is needed on the epidemiology and etiology of ILI to reduce the burden of respiratory infections in congregated military settings.

Methods. We conducted a prospective cohort study to assess ILI patterns among US Army recruits in a 9-week basic combat training course at Ft. Benning, GA. Demographic data, vaccination history, and information on recent illness were collected at enrollment in January 2017. Participants were divided into two platoons with staggered biweekly visit schedules. Visits occurred from reception through training, with nasal swabs and symptom surveys (all visits) and blood draws (weeks 8 and
1028. Pharmacokinetics (PK) and Safety of Intravenous (IV) Brincidofovir (BCV) in Healthy Adult Subjects

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Background. BCV is a lipid conjugate nucleotide that has shown rapid viral clear ance in patients with adenovirus infection and improved survival in animal models of smallpox. In preclinical studies in rats, IV BCV dosed twice weekly for up to 29 days was not associated with gastrointestinal (GI), hematopoietic, hepatic, or renal toxicity. This study evaluated the safety and PK of IV BCV in healthy subjects.

Methods. In this double-blind study, subjects were randomized 3:1 to receive IV BCV or placebo in sequential single ascending dose cohorts (Table 1). Plasma PK samples were collected over 7 days and assayed by HPLC-MS. Plasma BCV PK parameters were determined by non-compartmental analysis and dose proportionality was assessed. Safety assessments were collected over 14 days.

Results. Forty healthy male subjects (18–46 years, 83% White) were enrolled and completed the study. Plasma BCV Cmax and AUC∞ increased in proportion to dose (Table 1). AEs and alanine aminotransferase (ALT) elevations were dose- and infusion duration related (Table 1). GI AEs were mild. All AEs and ALT elevations were transient and no serious AEs occurred.

Table 1. BCV PK and Safety

| BCV | Cmax (ng/mL) | AUC∞ (ng h/mL) | 2 h Infusion 4 h Infusion 2 h Infusion Placebo
|-----|-------------|----------------|-------------------------------------------|
| 10 mg | 613 (25%) 1412 (27%) 2952 (19%) 1588 (14%) NA |
| 25 mg | 1312 (26%) 2889 (37%) 5948 (19%) 6570 (15%) NA |

Drug-related AEs

| Headache | Diarrhea | Nausea | Decreased appetite | Headache | Pain, phlebitis | Elevated liver |
|----------|----------|--------|-------------------|----------|---------------|---------------|
| 3 (32%)  | 3 (32%)  | 0      | 2 (22%)  | 2 (22%)  | 1 (11%)  | 1 (11%)  |

Cmax and AUC∞ presented as geometric mean (%CV).

*ALT >2x ULN in 2 BCV 50 mg 4h infusion and 1 placebo subjects; 1 ALT elevation considered an AE.

Conclusion. Single doses of BCV 10–50 mg administered as a 2h IV infusion were well tolerated and not associated with significant clinical or laboratory abnormalities. BCV IV 10 mg and BCV IV 50 mg achieved geometric mean plasma BCV AUC∞ similar to and 4.5-fold, respectively, values achieved with BCV oral 100 mg tablets (Cmax = 251 mg/mL and AUC = 11894 mg h/mL). These data support evaluation of repeat dose administration in healthy subjects and virally-infected patients.

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1029. A Mortality Analysis of the Cytomegalovirus (CMV) Infection Letermovir Prophylaxis Trial in CMV-Seropositive Recipients of Allogeneic Hematopoietic Cell Transplantation (HCT)
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Background. In a Phase III randomized, double-blind, placebo-controlled study of CMV-seropositive HCT recipients, letERV zorn prophylaxis significantly reduced the incidence of clinically significant CMV infections (CS-CMVi) through 24 weeks post-HCT. We investigated the impact of letervim mortality on prognosis through Week 48 post-HCT.

Methods. Adult CMV-seropositive allogeneic HCT recipients with undetectable plasma CMV DNA at screening who could initiate treatment by Week 4 post-HCT were eligible. Subjects stratified by high or low CMV disease risk were randomized 2:1 to letervim dose at 480 mg/d (240 mg/d if on cyclosporine) or placebo PO or IV through Week 14 post-HCT. Time to all-cause mortality and non-relapse mortality (defined as death due to any reason other than the indication for HCT) through Week 48 post-HCT were presented using Kaplan–Meier (KM) plots censored at study discontinuation for reasons other than death/non-relapse death or upon study completion. Distribution of time to mortality endpoints was stratified by log-rank tests using two-sided P-values.

Results. Of 565 patients randomized and treated with 1:1 ratio of dose study drug, subjects began study drug a median of 9 days post-HCT; 36.5% started post-engraftment. The observed KM event rate for all-cause mortality was lower in the letervim group (10.6%) than the placebo group (15.5%) at Week 24 post-HCT, and remained lower through Week 48 post-HCT (21.4% vs. 26.2%) (Figure 1). The observed K-m event rate for all-cause mortality in subjects who developed CS-CMVi was also lower in the letervim group (4.6%) than the placebo group (17.1%) at Week 48 post-HCT. The observed KM event rate for non-relapse mortality was lower in the letervim group (6.9%) vs. the placebo group (11.2%) at Week 24 post-HCT, and remained lower in the letervim group (13.9%) than the placebo group (17.5%) through Week 48 post-HCT (Figure 2).

Conclusion. All-cause and non-relapse mortality were reduced in the letervim group compared with the placebo group through Week 48 post-HCT (relative risk reduction ~18% and ~21%, respectively). These results are consistent with a clinically meaningful survival benefit for letervim prophylaxis.

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1030. Human Coronavirus Circulation in the USA, 2014–2017
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