

analysis among critically ill patients, the use of RDV showed decrease in mortality (OR 0.32 95% CI; 0.13 – 0.75 p value – 0.009*).

Conclusion. RDV did not decrease the in-hospital mortality among moderate to severe COVID – 19. However, there seems to be a significant reduction in mortality in critically ill patients.

Disclosures. All Authors: No reported disclosures

541. Comparing Patients with Severe COVID-19 Who Improve to the Point of Discharge Following an Abbreviated Course (< 5 Days) of Remdesivir (RDV) Versus a Standard Course (≥5 Days)

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Session: P-24. COVID-19 Treatment

Background. The COVID-19 pandemic has negatively affected our healthcare system. Our hospitals have reached maximum capacity on several occasions. Because of the need to make beds available to new patients, some patients with severe COVID-19 who were on low flow O2 supplementation have been discharged home prior to completion of the standard (≥ 5-day) RDV course. To date, data are limited regarding clinical outcomes on these patients. Because of this, we conducted a retrospective study to assess the clinical outcomes of patients who received an abbreviated treatment course of RDV.

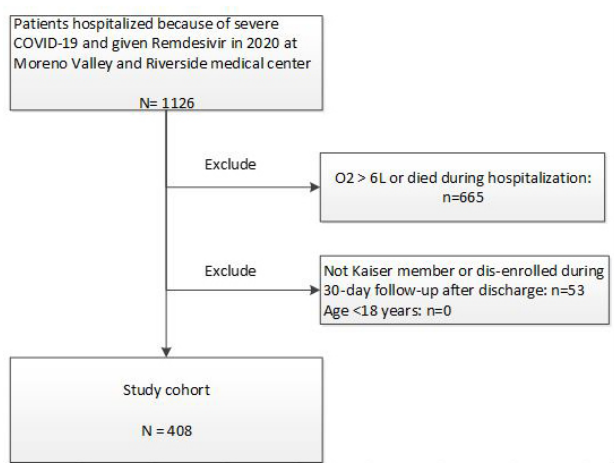
Methods. Retrospective (chart review) study

Subject population. All nonpregnant adult patients who were hospitalized at Kaiser Permanente Riverside Medical Center and Kaiser Permanente Moreno Valley Medical Center in 2020 with severe COVID-19 who required low flow O2 supplement during hospitalization who received RDV and discharged from hospital alive. Severe COVID-19 = positive SARS-CoV-2 PCR + evidence of lung involvement on lung imaging (X-ray or CT) + O2 saturation ≤ 94% on room air or requirement of O2 supplement.

Inclusion criteria. Age ≥ 18 years; Hospitalized with severe COVID-19; Given RDV

Exclusion criteria. Pregnancy; O2 requirement > 6 L including high flow and mechanical ventilation (noninvasive or invasive); discontinuation of RDV due to adverse effects

Figure 1. Patient Section.



Results. Mortality rate: no difference (2.1% vs 1.8%, p=0.84). 30 day post-discharge ED visit: twice more likely in the abbreviated RDV group as compared to the group receiving the standard duration (16.1% vs 8.5%, p=0.03). 30 day readmission: almost 10 times more likely in the abbreviated RDV group as compared to the group receiving the standard duration (11.9% vs 1.2%, p< 0.001).

Table 1. Patient's Characteristics

	<5-day course (N=241)	≥5-day course (N=167)	Total (N=408)	P-Value
Medical Center, n(%)				0.63
Kaiser Permanente Moreno valley	91 (37.8%)	67 (40.1%)	158 (38.7%)	
Kaiser Permanente Riverside	150 (62.2%)	100 (59.9%)	250 (61.3%)	
Sex, n(%)				0.28
Female	101 (41.9%)	79 (47.3%)	180 (44.1%)	
Male	140 (58.1%)	88 (52.7%)	228 (55.9%)	
Race/ethnicity, n(%)				0.26
White	64 (26.6%)	38 (22.8%)	102 (25%)	
Black	20 (8.3%)	19 (11.4%)	39 (9.6%)	
Hispanic	140 (58.1%)	90 (53.9%)	230 (56.4%)	
Asian/Pacific Islander	16 (6.6%)	17 (10.2%)	33 (8.1%)	
Other/unknown	1 (0.4%)	3 (1.8%)	4 (1%)	
Age at admission				0.01
Mean (SD)	60.3 (15.65)	56.8 (15.03)	58.9 (15.48)	
Median (IQR)	60.6 (50.6, 72.2)	55.6 (45.1, 67.4)	59.1 (20.1, 96.8)	
Range	(20.1-95.8)	(24.1-96.8)	(20.1-96.8)	
Charlson Comorbidities Index, n(%)				0.65
0	92 (38.2%)	71 (42.5%)	163 (40%)	
1	61 (25.3%)	41 (24.6%)	102 (25%)	
2+	88 (36.5%)	55 (32.9%)	143 (35%)	
O2 at admission				0.64
Mean (SD)	2.5 (0.96)	2.6 (1.01)	2.6 (0.98)	
Median (IQR)	2 (2, 3)	2 (2, 3)	2 (2, 3)	
Range	(1.5-6.0)	(1.0-6.0)	(1.0-6.0)	
O2 at discharge				0.14
Mean (SD)	2.5 (0.93)	2.4 (0.84)	2.4 (0.89)	
Median (IQR)	2 (2, 3)	2 (2, 3)	2 (2, 3)	
Range	(0.0-6.0)	(0.0-5.0)	(0.0-6.0)	
Steroids, n(%)	229 (95%)	145 (86.8%)	374 (91.7%)	0.003
Dexamethasone, n(%)	223 (92.5%)	141 (84.4%)	364 (89.2%)	0.01

Table 2. Clinical Outcomes. *8 Patients Who Died Within 30-Day from Discharge Were Excluded

30-day outcomes, n(%)				
Mortality	5 (2.1%)	3 (1.8%)	8 (2%)	0.84
ED*	38 (16.1%)	14 (8.5%)	52 (13%)	0.03
Readmission*	28 (11.9%)	2 (1.2%)	30 (7.5%)	<0.001

Clinical Outcomes *8 patients who died within 30-day from discharge were excluded

Conclusion. Though there is no difference in 30 day mortality rate, the patients who received the abbreviated RDV course are twice more likely to have ER visit and 10 times more likely to have readmission within 30 day post discharge despite more patients in the abbreviated course receiving steroids. The findings suggest that completing an at least 5-day course of RDV may be beneficial even in patients who demonstrate a clinical response earlier in course.

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542. Use of Bamlanivimab in Cancer Patients with Mild-to-Moderate COVID-19

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Background. Bamlanivimab is a monoclonal antibody that was granted an emergency use authorization by the US Food and Drug Administration in November 2020 for patients with mild to moderate coronavirus disease 2019 (COVID-19). It initially showed promising results with decreasing hospitalizations and return emergency department visits in immunocompetent patients. We evaluated the role of bamlanivimab in the cancer patient population.

Methods. We conducted a retrospective matched study of all cancer patients diagnosed with mild to moderate COVID-19 who received bamlanivimab in our acute cancer care center (ACCC) from December 2020 to February 2021. These patients were compared to a control group of cancer patients who presented to our ACCC and were diagnosed with mild to moderate COVID-19 from March to November 2020 before the introduction of bamlanivimab. Control patients were matched by age and underlying malignancy. All patients had a baseline oxygen saturation $\geq 94\%$ and an absolute neutrophil count $> 500 \text{ mm}^3$. Demographics, clinical characteristics, and outcome that included COVID-related admissions, oxygen desaturation, ICU admission and 30-day mortality were compared in both groups.

Results. A total of 108 patients were analyzed with 54 patients in each group, of which 59% consisted of hematologic malignancies, and 33% were ≥ 65 years. The presenting symptoms were similar in both groups and mainly consisted of cough, fever, and dyspnea. Patients who received bamlanivimab were less likely to be admitted to the hospital (24% vs. 91%; $p < 0.0001$), experience oxygen desaturation $< 94\%$ during follow-up (11% vs 44%; $p = 0.0001$), require oxygen supplement (7% vs. 44%; $p < 0.0001$), or be admitted to the ICU (4% vs 15%; $p = 0.046$). No 30-day mortality was observed in the bamlanivimab group with 2 (4%) occurring in the control group. However, the difference was not significant.

Conclusion. Bamlanivimab decreased hospital and ICU admissions in cancer patients. In addition, bamlanivimab reduced oxygen requirement and the risk of hypoxia and progression to severe disease in this patient population.

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543. Molnupiravir Maintains Antiviral Activity Against SARS-CoV-2 Variants In Vitro and in Early Clinical Studies

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Session: P-24. COVID-19 Treatment

Background. Molnupiravir (MOV, MK-4482, EIDD-2801) is an orally administered prodrug of N-hydroxycytidine (NHC, EIDD-1931), a nucleoside with broad antiviral activity against a range of RNA viruses. MOV acts by driving viral error catastrophe following its incorporation by the viral RdRp into the viral genome. Given its mechanism of action, MOV activity should not be affected by substitutions in the spike protein present in SARS-CoV-2 variants of concern which impact efficacy of therapeutic neutralizing antibodies and vaccine induced immunity. We characterized MOV activity against variants by assessing antiviral activity in vitro and virologic response from the Phase 2/3 clinical trials (MOVE-In, MOVE-Out) for treatment of COVID-19.

Methods. MOV activity against several SARS-CoV-2 variants, was evaluated in an in vitro infection assay. Antiviral potency of NHC (IC50) was determined in Vero E6 cells infected with virus at MOI ~0.1 by monitoring CPE. Longitudinal SARS-CoV-2 RNA viral load measures in participants enrolled in MOVE-In and MOVE-Out were analyzed based on SARS-CoV-2 genotype. Sequences of SARS-CoV-2 from study participants were amplified from nasal swabs by PCR and NGS was performed on samples with viral genome RNA of $>22,000$ copies/ml amplified by primers covering full length genome with Ion Torrent sequencing to identify clades represented in trial participants. SARS-CoV-2 clades were assigned using clade.nextstrain.org.

Results. In vitro, NHC was equally effective against SARS-CoV-2 variants B.1.1.7 (20I), B.1351 (20H), and P1 (20J), compared with the original WA1 (19B) isolate. In clinical trials, no discernible difference was observed in magnitude of viral response measured by change from baseline in RNA titer over time across all clades represented including 20A through 20E and 20G to 20I. No participants at the time of the study presented with 20F, 20J, or 21A.

Conclusion. Distribution of clades in participants in MOVE-In and MOVE-Out was representative of those circulating globally at the time of collection (Oct 2020 – Jan 2021). Both in vitro and clinical data suggest that spike protein substitutions do not impact antiviral activity of MOV and suggest its potential use for the treatment of SARS-CoV-2 variants.

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or Material Support, Shareholder; WuXi Biologics (Individual(s) Involved: Self): Consultant

544. Using Active Surveillance to Identify Monoclonal Antibody Candidates Among COVID-19 Positive Veterans, Atlanta VA Healthcare System

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Session: P-24. COVID-19 Treatment

Background. Monoclonal antibody (Mab) infusions have reduced hospitalization and mortality among higher risk patients with mild to moderate COVID-19 symptoms. Using an interdisciplinary team approach, we created a clinical team to proactively screen and outreach patients with COVID-19 to equitably offer Mab.

Methods. From December 28, 2020 - May 3, 2021, a clinical team consisting of an infectious disease pharmacist and physician, reviewed each outpatient with a positive SARS-CoV-2 PCR test at the Atlanta VA Healthcare System (AVAHCS) daily. The clinical team used the published Emergency Use Authorization criteria to determine eligibility. Eligible patients were prioritized using the Veterans Health Administration (VACO) Index for COVID-19 Mortality, which estimates the risk of 30-day mortality after COVID-19 infection using pre-COVID-19 health status (Figure 1). Eligible patients were contacted via telephone to confirm eligibility and obtain verbal consent. We performed SARS-CoV-2 IgG antibody tests when possible prior to Mab infusion, but results did not preclude Mab receipt. Telehealth follow-up occurred at 1- and 7-days post infusion.

Figure 1. Veterans Health Administration COVID-19 (VACO) Index for COVID-19 Mortality



Overview of the elements of the VACO index, part 1 of 2.

Figure 1 continued. Veterans Health Administration COVID-19 (VACO) Index for COVID-19 Mortality

