535. Comparison of Outcomes in Patients Positive for Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Infection After Monoclonal Antibody Therapy (MAT) with Bamlamivimab or Casirivimab-Imdevimab

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Background. Limited options currently exist for treatment of patients diagnosed with symptomatic coronavirus 2019 (COVID-19). Monoclonal antibody therapy (MAT) has been investigated as a therapeutic option for symptomatic COVID-19 patients in the outpatient setting at high-risk for progression to severe disease based on emergency use authorization (EUA) criteria. No published studies have compared outcomes for patients treated with different MAT for COVID-19.

Methods. This was a single-center, retrospective cohort study at The Ohio State University Wexner Medical Center to compare COVID-19-related emergency room (ER) visits, admissions, and mortality at 30 days after MAT infusion for adult patients with symptomatic SARS-CoV-2 between November 16, 2020 and February 2, 2021 who received bamlanivimab versus those who received casirivimab-imdevimab. Statistical analysis used logistic regression analysis to determine the odds ratio (OR) to evaluate the relationship between patient characteristics, MAT, and outcomes.

Results. The cohort included 943 patients with SARS-CoV-2 who received MAT, including 658 patients who received bamlanivimab and 285 who received casirivimab-imdevimab. Outcome results between patients who received bamlanivimab and casirivimab-imdevimab showed no statistically significant difference seen in the number of COVID-19 related ER visits (3.2% vs 3.5%, p = 0.80), hospital admissions (4.6% vs 2.8%, p = 0.21), or mortality (0.5% vs 0.7%, p = 0.63). Multivariate analysis showed no statistically significant difference in outcomes between the groups when accounting for potential confounders. As reflected in the Table, chronic lymphocytic leukemia (CLL), gender, and asthma were associated with increased COVID-19 related ER visit within 30 days of infusion and age, chronic obstructive pulmonary disease, CLL, and lupus were associated with increased risk for COVID-19 related admission within 30 days of infusion. Age and obesity with body mass index greater than 35 mg/kg^2 were associated with increased risk for COVID-19 related mortality at 30 days.

Logistic Regression for ER Visit, Hospital Admission, and Mortality for COVID-19 Patients who Received Bamlanivimab versus Casirivimab-Imdevimab

	OR	95% Confidence Interval	p-value
ER Visit			
Bamlanivimab	0.97	0.44 – 2.12	0.94
CLL	11.1	3.29 – 37.4	< 0.001
Asthma	2.98	1.26 – 7.04	0.01
Male	0.33	0.14 – 0.80	0.015
Hospital Admissions			
Bamlanivimab	1.76	0.77 – 3.99	0.18
Age (per ten years)	1.77	1.35 – 2.32	< 0.001
COPD	4.47	1.74 – 11.54	0.002
CLL	7.82	2.55 – 24.0	< 0.001
Systemic Lupus Erythematosus	15.9	2.96 – 85.7	0.001
Mortality			
Bamlanivimab	0.60	0.13 – 2.85	0.52
BMI > 35 mg/kg^2	6.63	1.24 – 35.5	0.03
Age (per ten years)	2.96	1.60 – 5.47	0.001

Conclusion. COVID-19 related outcomes were similar when comparing patients with COVID-19 treated with bamlanivimab versus those treated with casirivimab-imdevimab.

Disclosures. **Mohammad Mahdee Sobhanie, M.D.**, **Regeneron** (Scientific Research Study Investigator)**Regeneron** (Scientific Research Study Investigator, Was a sub-investigator for Regeneron 2066 and 2069) **Carlos Malvestutto, M.D.**, **Lilly** (Scientific Research Study Investigator)**Regeneron Inc.** (Scientific Research Study Investigator)**ViiV Healthcare** (Advisor or Review Panel member)

536. Clinical Outcomes of Hospitalized COVID-19 Patients Treated with Remdesivir-NEAT ID 909REM Study

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Background. There are few real-world data on the use of remdesivir (RDV) looking at timing of initiation in relation to symptom onset and severity of presenting disease.

Methods. We conducted multi-country retrospective study of clinical practice and use of RDV in COVID-19 patients. De-identified medical records data were entered into an e-CRF. Primary endpoints were all-cause mortality at day 28 and hospitalization duration. We assessed time from symptom onset to RDV start and re-admission. We included adults with PCR-confirmed symptomatic COVID-19 who were hospitalized after Aug 31, 2020 and received at least 1 dose of RDV. Descriptive analyses were conducted. Kaplan-Meier methods were used to calculate the mortality rate, LogRank test to compare groups defined by severity of disease. Competing risk regression with discharge and death as competing events was used to estimate duration of hospitalization, and Gray's test to compare the groups.

Results. 448 patients in 5 countries (12 sites) were included. Demographics are summarized (table) by 3 disease severity groups at baseline: no supplemental oxygen (NSO), low flow oxygen ≤6 L/min (LFO), and high-flow oxygen > 6L/min (HFO). No demographic differences were found between groups except for the higher percentage of cancer/chemotherapy patients in NSO group. Corticosteroids use was HFO 73.6%, LFO 62.7%, NSO 58.0%. Mortality rate was significantly lower in NSO, and LFO groups compared with HFO (6.2%, 10.2%, 23.6%, respectively; Fig1). Median duration of hospitalization was 9 (95%CI 8-10), 9 (8-9), 13 (10-15) days, respectively (Fig2). Median time from first symptom to RDV start was 7 days in all 3 groups. Patients started RDV on day 1 of hospitalization in HFO and LFO and day 2 on NSO groups. And received a 5 day course (median). Readmission within 28-days of discharge was < 5% and similar across all 3 groups.

Table 1. Patients baseline characteristics and primary and secondary outcomes

		Disease severity at baseline			
	Overall	High flow oxygen	Low flow oxygen	No supplemental oxygen	P-value
	N=448	N=72	N=295	N=81	
Age (years), median (IQR)	65 (54-76)	63.5 (56-73.5)	66 (54-76)	62 (54-77)	0.695
Male	286 (63.8)	44 (61.1)	193 (65.4)	49 (60.5)	0.623
White caucasian	159 (35.5)	28 (38.9)	106 (35.9)	25 (30.9)	0.459
Body mass index (BMI, kg/m^2), median (IQR)	28.4 (24.9-32.2)	28.8 (26.5-34.6)	28.2 (25.2-32.2)	27.7 (23-31.3)	0.169
Comorbidities, n (%)	355 (79.2)	57 (79.2)	233 (79.0)	65 (80.2)	0.969
Cardiovascular Disease excluding Hypertension	115 (25.7)	19 (26.4)	82 (27.8)	14 (17.3)	0.348
Diabetes at baseline	138 (30.8)	26 (36.1)	95 (32.2)	17 (21.0)	0.200
Hypertension	202 (45.1)	33 (45.8)	130 (44.1)	39 (48.1)	0.977
Asthma	33 (7.4)	6 (8.3)	23 (7.8)	4 (4.9)	0.906
COPD	29 (6.5)	6 (8.3)	20 (6.8)	3 (3.7)	0.801
Severe renal disease	16 (3.6)	2 (2.8)	11 (3.7)	3 (3.7)	0.994
Liver disease	9 (2.0)	2 (2.8)	4 (1.4)	3 (3.7)	0.724
HIV infection	2 (0.4)	1 (1.4)	1 (0.3)	0 (0)	0.745
Chemo/radiotherapy for cancer	46 (10.3)	3 (4.2)	25 (8.5)	18 (22.2)	0.002
Receiving Immuno-Suppressive Agent (Not for Cancer)	19 (4.2)	3 (4.2)	13 (4.4)	3 (3.7)	0.997
Obesity	74 (16.5)	17 (23.6)	48 (16.3)	9 (11.1)	0.308
Dementia	15 (3.3)	1 (1.4)	12 (4.1)	2 (2.5)	0.804
Abnormal Imaging results	395 (88.2)	67 (93.1)	262 (88.8)	66 (81.5)	0.066
Presence of Pulmonary Infiltrates, n (%)	340 (75.9)	52 (72.2)	231 (78.3)	57 (70.4)	0.036
Corticosteroids	285 (63.6)	53 (73.6)	185 (62.7)	47 (58.0)	0.058
Mortality					
Number of deaths by Day 28	52	17	30	5	
Kaplan-Meier estimate of mortality by Day 28 – % (95% CI)	11.6 (9.0-15.0)	23.6 (15.4-35.2)	10.2 (7.2-14.3)	6.2 (2.6-14.2)	<0.001
Hospitalization					
Number of discharges by Day 28	369	52	248	69	
Median duration on hospitalization (95% CI) - days	9 (8-10)	13 (10-15)	9 (8-9)	9 (8-10)	0.011
Remdesivir exposure					
Median (IQR) time from first symptom to use of remdesivir - days	7 (4-9)	7 (5-9)	7 (4-9)	7 (4-11)	0.792
Median (IQR) time from hospitalization to use of remdesivir- days	1 (0-2)	1 (0-1)	1 (0-4)	2 (1-3)	<0.001
Median (IQR) duration of use of remdesivir - days	5 (4-5)	5 (3-6)	5 (4-5)	5 (4-6)	0.522
Readmission					
Total number of discharges at the analysis time point	389	53	261	75	
Total number of readmitted within the 28 weeks of discharge	16	2	11	3	
Proportion of re-admission within 28 days of discharge (95% CI)	4.1 (2.4-6.6)	3.8 (0.5-13.0)	4.2 (2.1-7.4)	4.0 (0.8-11.2)	0.988