Table 3. Risk factors for ED visits or hospitalization in infused patients

Variable	Infused		P value
	ED or Hospital Visit (n=26)	No Visits (n=186)	
Female gender	12 (46%)	90 (48%)	NS
Median age [range}	62 [32 – 84]	61 [18 – 98]	NS
Age >65	11 (42%)	73 (39%)	NS
Race / Ethnicity			
White	14 (54%)	143 (77%	<.05
African American	8 (31%)	29 (15%)	NS
Hispanic	3 (11%)	9 (5%)	NS
Asian	0	3 (2%)	NS
Other/ Unknown	1 (1%)	2 (1%)	NS
COPD	5 (19%)	22 (12%)	NS
Hypertension	17 (65%)	84 (45%)	NS
Heart disease	4 (15%)	19 (10%)	NS
Immunosuppressed	7 (26%)	38 (20%)	NS
Chronic Kidney disease	5 (31%)	28(35%)	NS
Obesity BMI>35	8 (31%)	65 (35%)	NS
Obesity BMI>40	5 (19%)	27 (14%)	NS
Diabetes	7 (27%)	56 (30%)	NS
>1 Comorbidity	16 (61%)	89 (47%)	NS
Mean days to infusion from symptom onset [range}	6 [3-11]	5 [1-11]	NS
Days to infusion from symptom onset >5	15 (57%)	86 (46%)	NS
Bamlanivimab therapy	19 (73%)	68 (36%)	<.001

Conclusion. Either neutralizing antibody therapy appears to markedly reduce acuity of COVID-19 disease even if patients do progress to requiring hospitalization. However, casirivimab/indevimab therapy also decreased ER visits and hospitalization suggesting better efficacy in our experience.

Disclosures. **Christopher Polk, MD**, **Atea** (Research Grant or Support)**Gilead** (Advisor or Review Panel member, Research Grant or Support)**Humanigen** (Research Grant or Support)**Regeneron** (Research Grant or Support) **Mindy Sampson, MD**, **Regeneron** (Grant/Research Support)

551. Remdesivir and Tocilizumab for the Treatment of Severe COVID-19 in a Community Hospital: A Retrospective Cohort Study

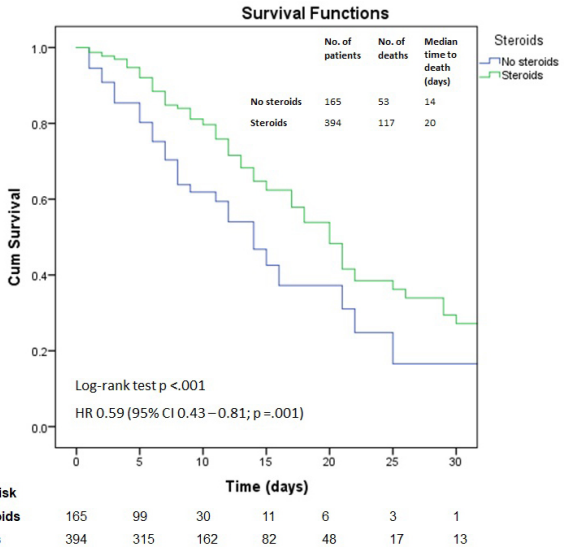
Guillermo Rodriguez-Nava, MD[1]; Goar Egoryan, MD[1]; Daniela Patricia Trelles-Garcia, MD[1]; Maria Adriana Yanez-Bello, MD[1]; Qishuo Zhang, MD[1]; Chul Won Chung, MD[1]; Emre E. Ozcekirdek, MD[1]; Ece Ozen, MD[2]; Bidhya Poudel, MD[1]; Heather Cohen, PharmD, BCPS[1]; Harvey Friedman, MD, FACP[1]; [1]AMITA Health Saint Francis Hospital, Evanston, IL; [2]AMITA Health Saint Joseph Hospital, Evanston, IL

Session: P-24. COVID-19 Treatment

Background. Growing evidence supports the use of remdesivir and tocilizumab for the treatment of hospitalized patients with severe COVID-19. The purpose of this study was to evaluate the use of remdesivir and tocilizumab for the treatment of severe COVID-19 in a community hospital setting.

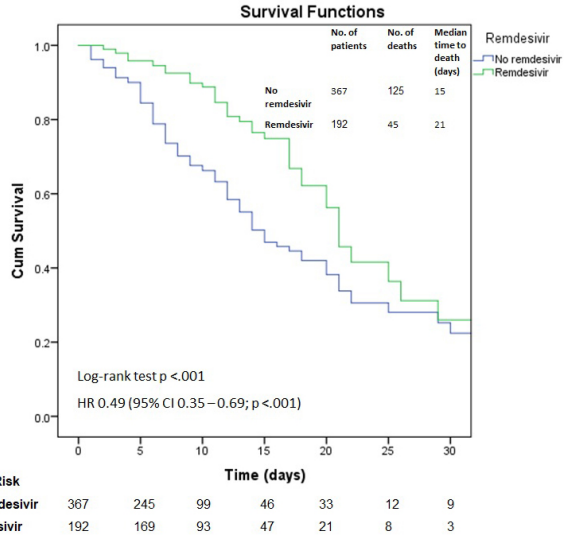
Methods. We used a de-identified dataset of hospitalized adults with severe COVID-19 according to the National Institutes of Health definition (SpO2 < 94% on room air, a PaO2/FiO2 < 300 mm Hg, respiratory frequency > 30/min, or lung infiltrates > 50%) admitted to our community hospital located in Evanston Illinois, between March 1, 2020, and March 1, 2021. We performed a Cox proportional hazards regression model to examine the relationship between the use of remdesivir and tocilizumab and inpatient mortality. To minimize confounders, we adjusted for age, qSOFA score, noninvasive positive-pressure ventilation, invasive mechanical ventilation, and steroids, forcing these variables into the model. We implemented a sensitivity analysis calculating the E-value (with the lower confidence limit) for the obtained point estimates to assess the potential effect of unmeasured confounding.

Figure 1. Kaplan–Meier survival curves for in-hospital death among patients treated with and without steroids



The hazard ratio was derived from a bivariable Cox regression model. The survival curves were compared with a log-rank test, where a two-sided P value of less than 0.05 was considered statistically significant.

Figure 2. Kaplan–Meier survival curves for in-hospital death among patients treated with and without remdesivir

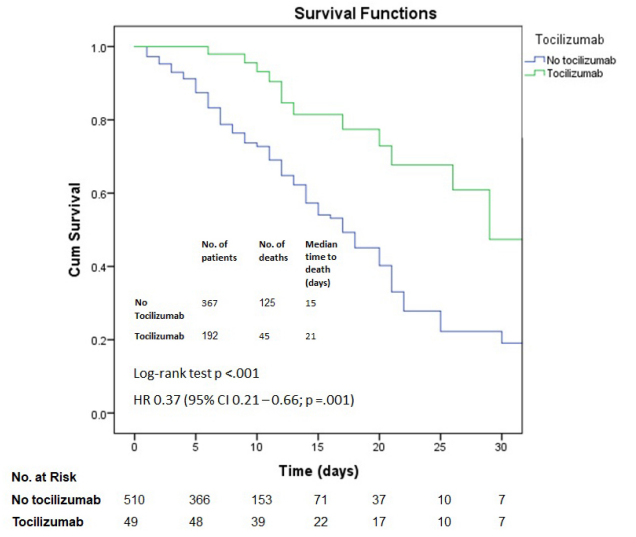


The hazard ratio was derived from a bivariable Cox regression model. The survival curves were compared with a log-rank test, where a two-sided P value of less than 0.05 was considered statistically significant.

Results. A total of 549 patients were included. The median age was 69 years (interquartile range, 59 – 80 years), 333 (59.6%) were male, 231 were White (41.3%), and 235 (42%) were admitted from long-term care facilities. 394 (70.5%) received steroids, 192

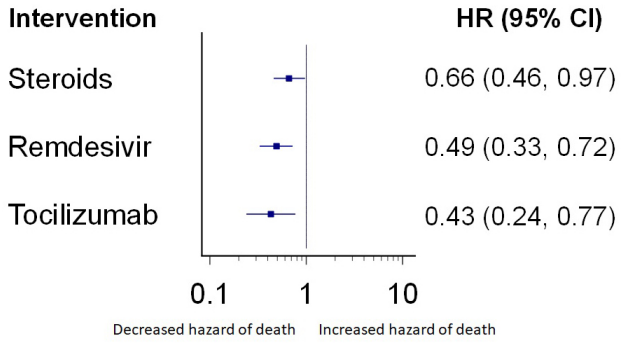
(34.3%) received remdesivir, and 49 (8.8%) received tocilizumab. By the cutoff date for data analysis, 389 (69.6%) patients survived, and 170 (30.4%) had died. The bivariable Cox regression models showed decreased hazard of in-hospital death associated with the administration of steroids (Figure 1), remdesivir (Figure 2), and tocilizumab (Figure 3). This association persisted in the multivariable Cox regression controlling for other predictors (Figure 4). The E value for the multivariable Cox regression point estimates and the lower confidence intervals are shown in Table 1.

Figure 3. Kaplan–Meier survival curves for in-hospital death among patients treated with and without tocilizumab



The hazard ratio was derived from a bivariable Cox regression model. The survival curves were compared with a log-rank test, where a two-sided P value of less than 0.05 was considered statistically significant.

Figure 4. Forest plot on effect estimates and confidence intervals for treatments



The hazard ratios were derived from a multivariable Cox regression model adjusting for age as a continuous variable, qSOFA score, noninvasive positive-pressure ventilation, and invasive mechanical ventilation.

Table 1. Sensitivity analysis of unmeasured confounding using E-values

Intervention	Point estimate (lower CI)	E value	E value for lower CI
Steroids		2.4	1.21
Remdesivir		2.21	1.64
Tocilizumab		2.42	1.54

CI, confidence interval. Point estimate from multivariable Cox regression model. The E value is defined as the minimum strength of association on the risk ratio scale that an unmeasured confounder would need to have with both the exposure and the outcome, conditional on the measured covariates, to explain away a specific exposure-outcome association fully: i.e., a confounder not included in the multivariable Cox regression model associated with remdesivir or tocilizumab use and in-hospital death in patients with severe COVID-19 by a hazard ratio of 1.64-fold or 1.54-fold each, respectively, could explain away the lower confidence limit, but weaker confounding could not.

CI, confidence interval. Point estimate from multivariable Cox regression model. The E value is defined as the minimum strength of association on the risk ratio scale that an unmeasured confounder would need to have with both the exposure and the outcome, conditional on the measured covariates, to explain away a specific exposure-outcome association fully: i.e., a confounder not included in the multivariable Cox regression model associated with remdesivir or tocilizumab use and in-hospital death in patients with severe COVID-19 by a hazard ratio of 1.64-fold or 1.54-fold each, respectively, could explain away the lower confidence limit, but weaker confounding could not.

Conclusion. For patients with severe COVID-19 admitted to our community hospital, the use of steroids, remdesivir, and tocilizumab were significantly associated with a slower progression to in-hospital death while controlling for other predictors included in the models.

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

553. Outcomes in Patients Positive for Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Infection After Treatment with Monoclonal Antibody Therapy (MAT) in the Outpatient Setting

Courtney Nichols, MD[1]; Mark Lustberg, MD, PhD[2]; Mohammad Mahdee Sobhanie, M.D.[3]; Joy Lehman, MS, PharmD[4]; Erica E. Reed, PharmD, BCPS-AQ ID[3]; Nicholas E. Kman, MD[5]; Mark Conroy, MD[3]; Michael Dick, M.D.[3]; James N. Allen, MD[6]; Jonathan Parsons, MD, MSc[6]; Carlos Malvestutto, M.D.[3]; [1]OSU Wexner Medical Center, Columbus, Ohio; [2]The Ohio State University, Columbus, Ohio; [3]The Ohio State University Wexner Medical Center, Columbus, OH; [4]Ohio State University Wexner Medical Center, Columbus, Ohio; [5]The Ohio State University College of Medicine, Columbus, Ohio; [6]Ohio State University, Columbus, Ohio

Session: P-24. COVID-19 Treatment

Background. Monoclonal antibody therapy (MAT) was granted Emergency Use Authorization (EUA) by the U.S. Food and Drug Administration for treatment of mild to moderate coronavirus disease 2019 (COVID-19) in adults with positive SARS-CoV-2 viral testing and at high risk for progression to severe COVID-19 with up to 10 days of symptoms. This study assessed the impact of MAT on COVID-19-related ER visits, admissions, and mortality for patients diagnosed with COVID-19.

Methods. This was a single-center, retrospective study at The Ohio State University Wexner Medical Center to compare COVID-19-related ER visits, admissions, and mortality at 30 days after receiving MAT in the outpatient setting with either bamlanivimab or casirivimab-imdevimab in adult patients diagnosed with SARS-CoV-2 between November 16, 2020 and February 2, 2021. Outcomes in patients who received MAT were compared to those of a control group of patients diagnosed with COVID-19 in the outpatient setting from May 16, 2020 through November 15, 2020 who would have qualified for MAT through EUA criteria had it been available. Statistical analysis used logistic regression analysis with backward selection to determine the odds ratios (OR) and the 95% confidence interval to evaluate the relationship between patient clinical characteristics and outcomes.

Results. This study cohort included 1,944 patients, including 943 who received MAT and 1,001 in the control group. The MAT group included 658 who received bamlanivimab and 285 who received casirivimab-imdevimab. Patients who received MAT compared to the control group had a lower rate of COVID-19 related ER visits (3.3% vs 7.4%, p = < 0.0001) and hospital admissions (4.0% vs 7.8%, p = < 0.0001). No statistically significant difference was seen in mortality between the MAT group (0.5%) and control group (1.1%, p = 0.17). After accounting for potential confounders, the difference between the monoclonal antibody and control groups remained significant for ER visits and hospital admissions as reflected in the table.

Logistic Regression for COVID-19 Related ER Visit and Hospital Admission for Patients with COVID-19			
	OR	95% Confidence Interval	p-value
ER Visit			
Monoclonal Antibody Therapy	0.49	0.31 – 0.76	0.001
Malignancy	2.15	1.26 – 3.68	0.005
Asthma	1.90	1.11 – 3.27	0.02
African-American	1.71	1.12 – 2.61	0.01
Age (per ten years)	0.085	0.75 – 0.98	0.02
Hospital Admission			
Monoclonal Antibody Therapy	0.37	0.24 – 0.56	< 0.001
Age (per ten years)	1.32	1.16 – 1.52	< 0.001
Chronic Kidney Disease	3.16	1.85 – 5.39	< 0.001
Chronic Obstructive Pulmonary Disease	3.07	1.63 – 5.77	0.001

Conclusion. Patients who received MAT for COVID-19 in the outpatient setting had a lower rate of COVID-19-related 30 day ER visits and hospitalizations compared to those who did not receive MAT, adjusting for potential confounders.

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)

554. Clinical Impact of Monoclonal Antibody Therapy with SARS-CoV-2 Infection

Inderjit Mann, MD[1]; Melinda Monteforte, B.S/PharmD/BCPS AQ[2]; Roderick Go, DO[2]; [1]Renaissance School of Medicine at Stony Brook University, Stonybrook, New York; [2]Stony Brook University Hospital, Stony Brook, NY

Session: P-24. COVID-19 Treatment

Background. The novel coronavirus SARS-CoV2 is the causative agent for COVID-19 responsible for the ongoing global pandemic. The spike protein on its surface binds to the angiotensin-converting enzyme 2 receptor helps to enter human cells. Neutralizing antibodies to this protein can be protective and helpful in alleviating