Comparison and analysis of baseline characteristics in patients with or without superinfection present.

28-day Mortality

Day-28 mortality comparison in patients with or without superinfection. Mortality was observed in 7/58 patients with a superinfection versus 20/346 patients without superinfection present (p < 0.001).

**Significant Variables with Correlation of Increased Superinfection Risk**

| Variables              | p value |
|------------------------|---------|
| Black Ethnicity        | 0.046   |
| Chronic Kidney Disease | 0.008   |
| ICU upon Admission     | <0.001  |
| Lymphocytopenia        | 0.007   |
| Tocilizumab            | 0.029   |

Multivariable analysis results for increased superinfection risk. All baseline characteristics with univariate analysis resulting in a p value of < 0.2 were included in the backwards, stepwise logistic regression model.

**Conclusion.** In conclusion, our retrospective cohort study reports a superinfection rate of 13.9%. Presence of a superinfection significantly increases the likelihood of mortality within 28-days from admission. Characteristics that have a significant correlation to increased risk of superinfections include Black ethnicity, chronic kidney disease, ICU upon admission, and receipt of tocilizumab.

**Disclosures.** Kevin W. Garey, Pharm.D., M.S., FASHP, Summit Therapeutics (Research Grant or Support)

339. COVID-19 Mortality in a Private Hospital in Mexico City

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**Session:** P-14. COVID-19 Complications, Co-infections, and Clinical Outcomes

**Background.** According to the Institute of Global Health Science (IGHS), mortality for Covid-19 patients treated in public hospitals in Mexico ranges between 30-50%, decreasing to 20% in private health care facilities. Our objective was to describe the mortality rate in a teaching private hospital in Mexico City.

**Methods.** We included all patients that were admitted to hospital Medica Sur in the south part of Mexico City during year 2020. We analyzed the total mortality presented in all our patients with a follow up of two months, and relay that to age and gender.

**Results.** During year 2020, we admitted in our hospital 1,075 patients with confirmed diagnosis of COVID-19 through nasopharyngeal molecular test; 772 were male (71.8%) with more than 50% between 40 and 59 years, while females were more frequent between 40 and 69 years’ age. Seventy-four patients (6.88%) died during hospitalization; 59 (79.7%) males and 15 females. Mortality rate was clearly related to age (figure 1) with 30% mortality for males between 80-89 years and 19% for females.

**Conclusion.** Mortality in private hospitals was clearly lower than in public hospitals. In our hospital, mortality was lower than 10%, mostly related to their availability of unlimited intensive care without ECMO and despite the lack of some drugs like Remdesivir. As described, space limitations for intensive care as well as the lack of trained personal impacted significantly the mortality in public hospitals.

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340. Outcomes of COVID-19 in Hospitalized SOT Recipients: Experience in Colombia, South America

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**Session:** P-14. COVID-19 Complications, Co-infections, and Clinical Outcomes

**Background.** SOT (SOT) recipients with COVID-19 are considered to be at high risk for severe clinical outcomes. Several descriptive studies have reported a high frequency of intensive care unit admission and death rates. There is a lack of evidence regarding the best approach for immunosuppressive therapy in SOT recipients with COVID-19.

**Methods.** We performed a single-centered, retrospective, observational study of all SOT recipients with SARS-CoV-2 confirmed infection RT-PCR from nasopharyngeal swab specimens who were admitted to the emergency department from March 25 to September 1, 2020. Glucocorticoid therapy was administered according to the criteria of the attending physician. We classified glucocorticoid therapy if the patient received dexamethasone 6 mg/day or methylprednisolone 40 mg/day, and a high dose if the patient received methylprednisolone 80–160 mg/day. Specimens collected within the first 48 hours were defined coinfection, while specimens collected after 48 hours were defined hospital-acquired superinfection.

**Results.** Of a total of 43 SOT recipients with COVID-19, 17 (39%) required intensive care unit admission. 32 (74.4%) required glucocorticoid therapy: 13 received low dose and 19 high dose. 15 (34.8%) had secondary infections. A total of 12 (27.9%) presented hospital-acquired bacterial superinfections, mostly caused by P. aeruginosa, most of isolations were from respiratory tract cultures. The median time from first hospital admission to superinfection diagnosis was 9 (7-13) days. Community-acquired co-infection at COVID-19 diagnosis was documented only in 3 (6.9%) patients, mostly caused by K. Pneumoniae, all isolations were from urine culture. Glucocorticoid therapy was indicated in 32 (80%) patients, 19 received high dose and 13 low doses.

**Conclusion.** Overall hospital mortality was 17.5%. ICU mortality was 41%. Overall mortality in the high dose steroids group was 37 % vs . 0% in the low dose group.

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341. Evaluation of Antimicrobial Use and Prescribing Patterns During the COVID-19 Pandemic in Patients Receiving Tocilizumab

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**Session:** P-14. COVID-19 Complications, Co-infections, and Clinical Outcomes

**Background.** Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) infected patients experience systemic inflammation and respiratory distress, which appears to be associated with increased cytokine release. During the peak of coronavirus disease 2019 (COVID-19), tocilizumab was used to treat critically ill patients with potential cytokine storm. However, tocilizumab has an increased risk of developing serious infections.

**Methods.** This retrospective observational chart review was approved by Institutional Review Board and evaluated patients admitted from March to November 2020, who were SARS-CoV-2 positive and received tocilizumab for the treatment group and no tocilizumab for the control group. The primary endpoint is usage of antimicrobials. The secondary endpoints are development and outcomes of new bloodstream infections and hospital length of stay and mortality. C-reactive protein test was used for categorical data and Mann-Whitney test was used for continuous data.

**Results.** A total of 160 patients were included in analysis, with 80 in each arm. 60% of patients in the treatment group required antibiotics compared to 35% in the control group (p = 0.0015), with the highest usage of anti-MRSA coverage, betalactams, cephalosporins, and carbapenems in both groups. Antifungal therapy was required in 21.3% of patients in the tocilizumab group compared to 6.3% in the control group (p = 0.0059), with echinocandins being the most used class in both groups. The median days of antimicrobial use in the tocilizumab group was 14 (IQR 7, 24.5) compared to 9 (IQR 6.5, 19) in the control group (p = 0.3346). In the treatment group, 60% of patients developed a secondary infection compared to 35% of patients in the control group (p < 0.0017). Secondary infection treatment failure was observed in 75% of tocilizumab patients compared to 60.7% of control patients (p = 0.1910). In hospital mortality was 50% in patients who received tocilizumab compared to 27.5% in the control group (p < 0.0039).

**Conclusion.** Patients on tocilizumab received more antimicrobials, but with a similar spectrum of antimicrobial coverage. Patients who received tocilizumab had
higher odds of developing secondary infections and expiring during their hospital stay. There were similar durations of antimicrobial therapy and treatment outcomes.

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342. Secondary Infections following Tocilizumab for Treatment of COVID-19

**Pneumonia**

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**Session:** P-14: COVID-19 Complications, Co-infections, and Clinical Outcomes

**Background.** Guidelines recommend use of tocilizumab (TCZ), an inhibitor of pro-inflammatory IL-6 signaling, for hospitalized patients with progressive severe or critical Coronavirus disease 2019 (COVID-19). The incidence of infectious complications following the use of TCZ for COVID-19 has not been well-described.

**Methods.** We conducted a retrospective, observational matched cohort study of severely ill, hospitalized adult patients with confirmed COVID-19 who were treated with TCZ between 2/24/2021 and 6/3/2021. The intervention group, comprised of patients who received a single dose of TCZ, was matched based on c-reactive protein (CRP) and fraction of inspired oxygen (FiO2) with a control group who did not receive TCZ, and were hospitalized between 10/12/2020 and 3/6/2021. The primary outcome of the study was diagnosis of a bacterial or fungal infection after day 3 of the index hospitalization. Secondary outcomes included all-cause mortality during the study period and length of stay.

**Results.** 75 patients who received TCZ were identified during the study period, and matched 1:1 with 75 control patients. Baseline CRP and FiO2 were similar between groups, while the median age in the TCZ group was younger (61 versus 71 years) reflecting the epidemiology of the outbreak during the TCZ and control study periods. 15 bacterial and fungal infections were identified in the TCZ group (20.0%) and 4 (5.3%) infections in the control group (p = 0.012). The majority of infections in both groups were bacterial, with a disproportionate number of bloodstream infections in the TCZ group (7 [9.3%] vs 2 [2.6%]; p = 0.166). 28 patients (37.3%) died in the TCZ group compared to 39 (52.0%) in the matched control (p = 0.068). Median time to discharge was similar between TCZ and control patients (11 versus 12 days; 95% CI -2.2).

**Conclusion.** Secondary infections in adult patients with severe and critical COVID-19 were more common in patients who had received TCZ. Prospective studies are needed to confirm and further describe this association.

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343. RURAL-COVID-19 Trial: Retrospective Analysis of COVID-19 Coinfections in Hospitalized Urban and Rural Adults

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**Session:** P-14: COVID-19 Complications, Co-infections, and Clinical Outcomes

**Background.** The impact of COVID-19 in rural communities has been well described. However, little is known regarding differences in coinfections among COVID-19 patients in rural vs. urban settings. Our primary objective is to evaluate community acquired coinfection (CACo) rates (< 72 hrs from admission) and healthcare-associated infection (HAI) rates (> 72 hrs from admission) in these populations. Secondary objectives include use of empiric antibiotics, pathogen prevalence, and patient outcomes.

**Methods.** Retrospective analysis of the first 255 adult patients admitted to a tertiary medical center with symptomatic COVID-19 and confirmed by PCR. Rural and urban categories were determined using patient address and county census data. Isolated pathogens were individually evaluated and considered coinfections if the patient met predetermined criteria.

**Results.** The rates of CACo for rural (n = 90) and urban (n = 165) residents were 11.1% and 13.3%, respectively. Non-respiratory coinfections, such as bloodstream and urinary tract infections, were more common in urban residents; however, empiric antibiotics were started in 75.1% of all subjects. Methicillin susceptible staphylococcus aureus and Escherichia coli were the most common pathogens isolated on admission in both populations. HAI rates were 13.3% in the rural residents vs 13.9% in the urban residents with Methicillin resistant staphylococcus aureus as the most common respiratory pathogen, although Pseudomonas aeruginosa was the most prevalent overall pathogen. There was no significant difference in hospital length of stay or 30-day all-cause mortality among both populations.

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

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Patient Outcomes Among Rural and Urban Populations

| Hospital Length of Stay | Rural | Urban |
|-------------------------|-------|-------|
| Baseline                | 8.17  | 8.66  |
| Emergency               | 12.05 | 11.05 |
| End Organ Damage        | Rural: 40% | Urban: 47% |
| Acute Respiratory Failure | 27.25 | 51.03 |
| Acute Kidney Injury     | 5.58  | 4.85  |
| Acute Liver Failure     | 6.87  | 4.46  |
| Bloodstream, sepsis     | 1.00  | 1.00  |
| Death due to Disease    | Rural: 24% | Urban: 31% |

**Conclusion.** There was no significant difference in the rate of CACO or HAI among rural or urban populations. Despite the high rate of antibiotic use to empirically cover community acquired respiratory infections at the start of the pandemic, only 1.9% of the subjects had a possible or proven respiratory coinfection on admission. Despite prior research showing worse outcomes for rural populations with COVID-19, our data demonstrates that coinfection rates and patient outcomes were similar among these populations when receiving medical care at an academic hospital.

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344. Prevalence and Impact of Post-Acute Sequelae of COVID-19 Among People Experiencing Homelessness in King County, WA Between September 2020 - May 2021

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**Session:** P-14: COVID-19 Complications, Co-infections, and Clinical Outcomes

**Background.** Homeless shelters are high risk settings for SARS-CoV-2 transmission. People experiencing homelessness (PEH) have high rates of chronic illness, and have been disproportionately affected by COVID-19. The burden of post-acute sequelae of COVID-19 (PASC) in PEH has not been well-studied and PEH may be uniquely affected due to barriers to medical care and the potential exacerbation of existing threats to health, housing, employment, and self-care.

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