

Table 1. Characteristics of nursing home individuals with repeat positive SARS-CoV-2 specimens 90 days or more following initial infection: July 2020 – March 2021.

Characteristic	High RNA Viral Load (Ct < 30)		Low RNA Viral Load (Ct ≥ 30 or negative at re-testing)†		P-value*
	Total N (%)	n (%)	Total n (%)	n (%)	
Median Age, years [Interquartile Range (IQR)]	67 [51-80]	62 [47-79]	68 [53-80]	0.56	
Median days from initial infection to repeat positive test [IQR]	194 [124-251]	122 [103-229]	201 [139-254]	0.13	
Nursing Home Role	Resident	40 (63%)	4 (40%)	36 (67%)	0.16
	HCP	24 (38%)	6 (60%)	18 (33%)	
Testing between Initial and Repeat Positive Test					
At least two negative SARS-CoV-2 RT-PCR or antigen test result	30 (47%)	6 (60%)	24 (44%)	0.49	
Had a negative SARS-CoV-2 RT-PCR or antigen test result 14 days prior to repeat positive test	32 (50%)	7 (70%)	25 (46%)	0.30	
Median days from most recent SARS-CoV-2 RT-PCR or antigen test to repeat positive test result [IQR]	7 [6-14]	4 [4-7]	8 [6-14]	0.05	
Symptom status at time of repeat positive test*					
Asymptomatic	31 (84%)	5 (50%)	26 (96%)	<0.01	
Symptomatic	6 (16%)	5 (50%)	1 (4%)		
Known or suspected COVID-19 exposure in nursing home outbreak at repeat positive episode †					
Yes	46 (79%)	9 (100%)	37 (76%)	0.18	
No	12 (21%)	0 (0%)	12 (25%)		
Symptomatic or confirmed or suspected COVID-19 exposure**					
Yes	48 (91%)	10 (100%)	38 (88%)	0.57	
No	5 (9%)	0 (0%)	5 (12%)		

Ct = Cycle threshold value; HCP = healthcare personnel; rRT-PCR = real-time reverse transcriptase polymerase chain reaction
 † 37 specimens had undetectable viral load when re-tested
 * High viral load and low viral load were compared for statistical significance by Wilcoxon Signed-rank Test or Chi-squared test where indicated
 ‡ Symptom status at time of repeat positive test is unknown for 27 cases (0 with Ct < 30, 27 with Ct ≥ 30)
 § Known COVID-19 exposure is unknown for 58 cases (5 with Ct<30 and 53 with Ct ≥ 30)
 ¶ Suspected COVID-19 exposure during a nursing home outbreak at time of repeat positive test is unknown for 6 individuals (1 with Ct<30 and 5 with Ct ≥ 30)
 †† Unknown exposure status for 12 individuals (12 with Ct ≥ 30)

Conclusion. In this study, nearly 1 in 6 NH residents and staff with repeat positive tests after 90 days demonstrated high viral RNA loads and viable virus, indicating possible infectivity. While individuals with high RNA viral load may be more likely to be symptomatic, distinguishing asymptomatic individuals who have high viral loads may be difficult with timing since initial infection, other test results, or exposure history alone.

Disclosures. John A. Jernigan, MD, MS, Nothing to disclose.

394. Descriptive Evaluation of Epidemiology and Microbiology of Patients with COVID-19 Pre/post Implementation of Corticosteroids as Standard of Care

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Session: P-16. COVID-19 Epidemiology and Screening

Background. The coronavirus disease 2019 (COVID-19) pandemic continues to present a significant global public health concern. As of June 2021, nearly 174 million cases of SARS-CoV-2 infection worldwide have been reported to the World Health Organization. Rigorous data on the efficacy of corticosteroids have now established its role as standard of care (SOC). Less recognition has been given to corticosteroid therapy and its association with risk of infection especially in those who are critically ill and prone to nosocomial pathogens.

Methods. This is a retrospective study of mechanically ventilated patients with COVID-19 from March 2020 to September 2020 at a single center. The primary endpoint for this study was description of microbiology and epidemiology of secondary infections and co-infections, defined as any infection following treatment for COVID-19. Secondary endpoints included the duration of corticosteroid use, length of hospital stay, ICU length of stay, and mortality.

Results. Of the 104 patients, 73% had co-infections or secondary infections. Pre-SOC patients were more likely to receive >10 days of corticosteroids (71% vs 30%). Co-infections were present in 12% of patients (13% in pre-SOC vs 11% in post-SOC), secondary infections occurred in 61% of patients (74% in pre-SOC vs 53% in post-SOC). The most common causative organism of co-infections and secondary infections were Staphylococcus aureus in the pre-SOC group and Escherichia coli and Pseudomonas aeruginosa in the post-SOC group. The mean hospital length of stay was 43 days pre-SOC vs 33 days post-SOC with a mean ICU length of stay of 33 vs 29 days, respectively. Mortality rate was similar between the two groups (55% vs 58%).

Conclusion. Differences in epidemiology and microbiology was seen pre and post implementation of dexamethasone in June, 2020. Higher rates of co-infections were seen with this prolonged use of corticosteroids pre-SOC but it is unclear whether patients developed more co-infections as result of extended corticosteroid use, a longer hospital stay, or other factors. Further studies are needed to assess the optimal duration of corticosteroid use in this patient population with consideration to weigh benefit vs risk.

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395. Early Predictors of Intensive Care Unit Admission among COVID-19 Patients in Qatar

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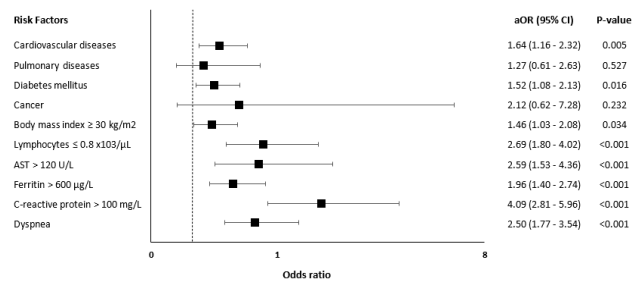
Session: P-16. COVID-19 Epidemiology and Screening

Background. Coronavirus disease (COVID-19) is associated with significant morbidity and mortality. This study aimed to explore the early predictors of intensive care unit (ICU) admission and in-hospital mortality among patients diagnosed with COVID-19.

Methods. This was a case-control study of adult patients with confirmed COVID-19. Cases were defined as patients admitted to ICU during the period February 29 - May 29, 2020. For each case enrolled, one control was matched by age and gender.

Results. A total of 1560 patients with confirmed COVID-19 were included. Each group included 780 patients with a predominant male gender (89.7%) and a median age of 49 years (interquartile range = 18). Predictors independently associated with ICU admission were cardiovascular disease (CVD) (adjusted odds ratio (aOR)=1.64, 95% confidence interval (CI): 1.16 - 2.32, p=0.005), diabetes (aOR=1.52, 95% CI: 1.08 - 2.13, p= 0.016), obesity (aOR=1.46, 95% CI: 1.03-2.08, p= 0.034), lymphopenia (aOR=2.69, 95% CI: 1.80-4.02, p< 0.001), high aspartate aminotransferase (AST) (aOR=2.59, 95% CI: 1.53-4.36, p< 0.001), high ferritin (aOR=1.96, 95% CI: 1.40-2.74, p< 0.001), high C-reactive protein (CRP) (aOR=4.09, 95% CI: 2.81-5.96, p< 0.001), and dyspnea (aOR=2.50, 95% CI: 1.77-3.54, p< 0.001). Similarly, significant predictors of mortality included CVD (aOR=2.16, 95% CI: 1.32- 3.53, p=0.002), diabetes (aOR=1.77, 95% CI: 1.07-2.90, p=0.025), cancer (aOR=4.65, 95% CI: 1.50-14.42, p= 0.008), lymphopenia (aOR=2.34, 95% CI: 1.45-3.78, p= 0.001), and high AST (aOR= 1.89, 95% CI: 1.04-3.43, p=0.036).

Risk Factors for ICU admission among patients with COVID-19 (N=1560)



Conclusion. Having CVD, diabetes, lymphopenia, and increased AST were independent predictors for both ICU admission and in-hospital mortality in patients with COVID-19. In addition, obesity, high ferritin, and CRP levels were associated with increased risk of ICU admission, while cancer was strongly associated with in-hospital mortality. Early identification and monitoring of patients at risk is essential in planning the level of care needed to prevent delay in medical intervention.

Disclosures. Adel Abou-Ali, PharmD, PhD, Astellas Pharma Global Development, Inc. (Employee)

396. Disparities in SARS-CoV-2 Antibody Prevalence: Findings from a Citywide Serosurvey in Holyoke, Massachusetts, November 2020-January 2021

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