

Baseline characteristics, comorbidities, and outcomes of COVID-19 patients hospitalized in Southwest Georgia, U.S. – an interim analysis of an early hot spot

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Background

Understanding the spectrum of disease severity is critical for identifying unrecognized risk factors associated with morbidity and mortality from COVID-19. The purpose of this study was to describe baseline characteristics, clinical presentation, and outcomes among patients hospitalized with COVID-19 in a major hotspot in the Southeastern U.S.

Objectives

The primary outcome was in-hospital mortality, which was assessed through discharge or June 14, 2020, whichever occurred first. Secondary outcomes included comorbidities, laboratory and radiographic findings, as well as clinical course.

Methods

This multicenter retrospective chart review included adult patients hospitalized with COVID-19, defined by laboratory-detected SARS-CoV-2 infection, in Southwest Georgia. Categorical and continuous variables were presented as number (percentage [%]) and median (interquartile range [IQR]), respectively. We used the Mann-Whitney U test, Chi-squared test, or Fisher's exact test to compare differences between survivors and non-survivors. Logistic regression was performed to investigate the relationship between baseline characteristics and clinical outcomes and the risk of in-hospital mortality among hospitalized COVID-19 patients.

Results

Table 1. Baseline characteristics of hospitalized COVID-19 patients

Characteristic	Total cohort (n=120)	Survivor (n=96)	Non-survivor (n=24)	P value
Age (years), median (IQR)	61 (50-72)	60 (48.8-69)	71.5 (60.5-78.3)	0.032
Male gender	53 (44)	41 (43)	12 (50)	0.520
Female gender	67 (56)	55 (57)	12 (50)	
Race				
• African American	87 (73)	74 (77)	13 (54)	
• Caucasian	30 (25)	19 (20)	11 (46)	0.025
• Latinx	3 (3)	3 (3)	0 (0)	
BMI (kg/m ²), median (IQR)	32.8 (26.2-39.5)	33.4 (27.9-39.4)	29.7 (23.1-42.1)	0.494
Pre-existing comorbidities	106 (88)	82 (85)	24 (100)	0.047
• Hypertension	80 (76)	64 (78)	16 (67)	1
• Diabetes mellitus without complications	35 (33)	29 (35)	6 (25)	0.616
• Diabetes mellitus with end organ damage	23 (22)	16 (20)	7 (29)	0.164
• Dementia	11 (10)	5 (6)	6 (25)	0.003
• Moderate to severe renal disease	22 (21)	14 (17)	8 (33)	0.034
Charlson comorbidity index, median (IQR)	4 (2-6)	3 (1-5)	5.5 (3.75-7)	0.271
Clinical symptoms prior to hospital admission				
• Shortness of breath	83 (69)	67 (70)	16 (67)	0.767
• Fever	75 (63)	61 (64)	14 (58)	0.637
• Cough	63 (53)	55 (57)	8 (33)	0.036

Table 2. Logistic regression analysis of in-hospital mortality risk factors for hospitalized COVID-19 patients

Variables	OR (95% CI)	P value
Age	1 (0.9-1.1)	0.136
Sex	0.8 (0.3-2.0)	0.576
Caucasian	2.5 (0.8-8.4)	0.126
Latinx	2.8 (0.4-18.5)	0.298
Hypertension	1 (0.4-2.6)	1
Diabetes mellitus without complications	0.9 (0.3-2.9)	0.941
Diabetes mellitus with end organ damage	2.0 (0.7-6.1)	0.208
Dementia	3.1 (0.7-13.8)	0.135
Moderate to severe renal disease	3.3 (1.0-10.8)	0.045
Mechanical ventilation	2.7 (0.8-9.6)	0.127
AKI	1.2 (0.4-3.67)	0.715
ARDS	3.1 (0.7-13.4)	0.128

Conclusions

Overall mortality was 20%, which was significantly higher in African American patients, as well as those with pre-existing comorbidities, specifically dementia and renal disease. In addition, mortality was significantly associated with critical illness. On logistic regression, pre-existing moderate to severe renal disease was associated with increased odds of in-hospital mortality. Most reports of COVID-19 have focused on large urban settings. However, early during the pandemic, we identified a large cluster of cases with a high-case fatality rate in a semirural setting in Southwest Georgia.

Figure 1. Clinical outcomes of hospitalized COVID-19 patients

