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Supplemental Table S1: Metabolic Syndrome Characteristics in non-Hispanic Black Patients

Characteristics	MetS (n=171)	Non-MetS (n=74)	p-value
Age, Mean ± SD - yr	61.2 ± 13.7	59.7 ± 15.1	0.4712
Female, no. (%)	100 (58.5)	38 (51.4)	0.3017
BMI[b], Mean ± SD - kg/m^2	35.7 ± 8.4	31.4 ± 8.0	0.0003
Charlson Index Score, Mean ± SD	3.9 ± 2.3	2.5 ± 2.0	<0.0001
MetS Diagnoses - no. (%)			
Prediabetes/Diabetes[c]	152 (88.9)	24 (32.4)	<0.0001
Obesity[d]	127 (74.3)	41 (55.4)	0.0035
Hypertension[e]	161 (94.2)	44 (59.5)	<0.0001
Triglycerides > 150 mg/dL	37/129 (28.7)	1/20 (5.0)	0.0259
Low HDL[f]	126 (73.7)	6 (8.1)	<0.0001
Laboratory Values, mean ± SD (no. measured)			
Ferritin ng/mL	871 ± 1194 (164)	858 ± 953 (72)	0.9251
C-reactive protein mg/L	126 ± 86 (160)	104 ± 89 (72)	0.0753
Lactate Dehydrogenase U/L	405 ± 160 (161)	394 ± 182 (72)	0.6516

[a]*Includes Hispanic, Asian, and Unknown,* [b]*The Body Mass Index (BMI) is weight in kilograms divided by the square of height in meters,* [c]*Prediabetes defined by WHO criteria: hemoglobin A1C ≥ 5.7, or documented hx of DM or on diabetic medication* [d]*BMI>30 kg/m2,* [e]*defined as history of HTN or anti-hypertensive medication,* [f]*High Density Lipoprotein (HDL) < 50 mg/dL for women and < 40 mg/dL for men or those on a statin with documented history of hyperlipidemia.*

Supplemental Table S2: Multivariable Analyses, Metabolic Syndrome vs Non-Metabolic Syndrome in non-Hispanic Black Patients

Outcomes	MetS (n=171)	Non MetS (n=74)	Risk Difference, % (95% CI)	Adjusted OR[a] (95% CI)	P-value
Hospital Mortality - no. (%)	48 (25.5)	10 (10.1)	14.6 (4.3, 24.9)	3.304 (1.31-8.32)	0.0112
ICU Required - no. (%)	96 (56.1)	22 (29.7)	26.4 (13.6, 39.2)	3.679 (1.94-6.99)	<0.0001
ARDS[b] - no. (%)	64 (37.4)	11 (14.9)	22.6 (11.7, 33.4)	3.908 (1.82-8.40)	0.0005
IMV - no. (%)	80 (46.8)	16 (21.6)	25.2 (13.2, 37.2)	3.683 (1.86-7.29)	0.0002
Length of Stay, mean ± SD, d	14.0 ± 10.6	10.6 ± 8.9	n/a	n/a	0.0181
Length of Stay, median (IQR), d	11 (6, 19)	8 (4, 14)	n/a	n/a	0.0548
Hospital Readmission no., %	16/128 (12.5)	4/67 (5.97)	6.5 (-1.5, 14.6)	1.471 (0.43-5.06)	0.5402

[a]*Multivariable Logistic Regression Model adjusted for Age, Sex, Race, Hospital Site, and Charlson Comorbidity Index.* [b]*Acute Respiratory Distress Syndrome (ARDS) defined according to Berlin Definition. ICU=Intensive Care Unit; MetS=Metabolic Syndrome; IMV=Invasive Mechanical Ventilation.*
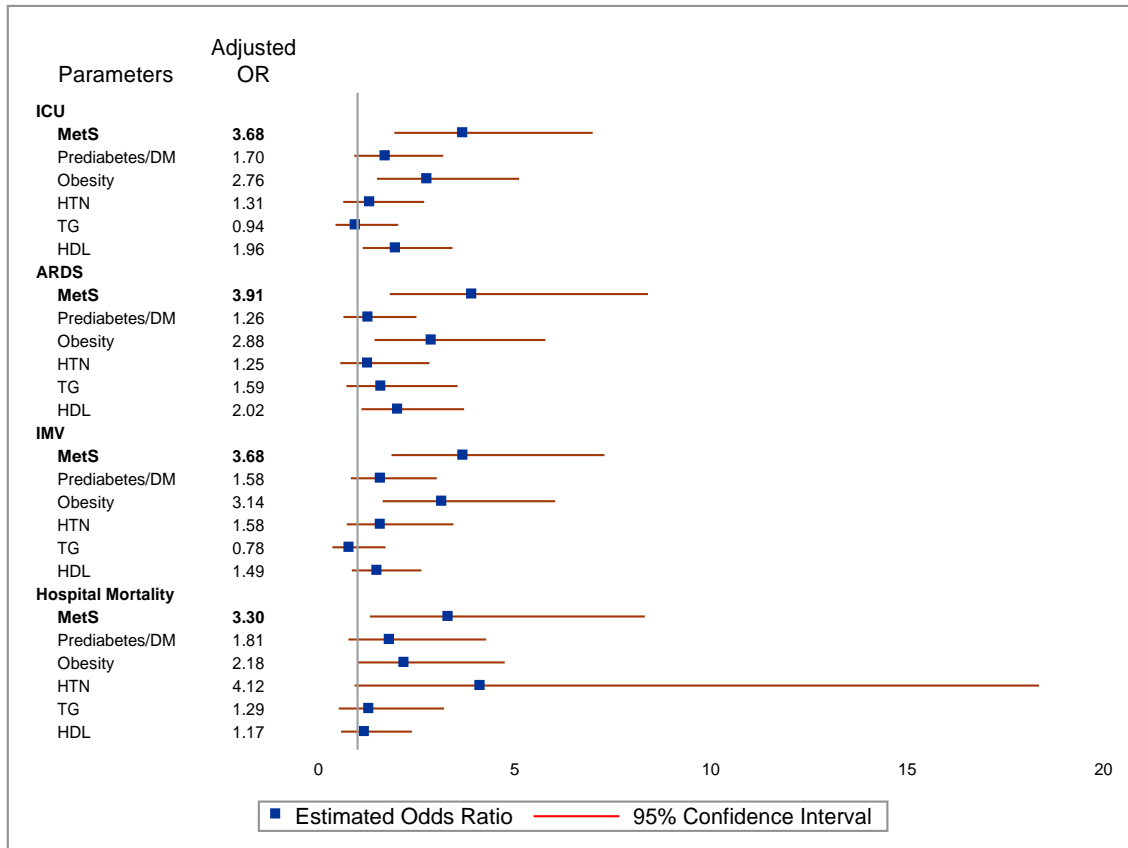
Supplemental Table S3: Inflammatory Markers stratified by cutoff levels

Inflammatory markers - no. (%)	MetS	Non-MetS	p-value
Ferritin > 300 ng/mL **(n=201/284)**[a]	136 (67.7)	65 (32.3)	0.2046
LDH > 365 U/L (n=123/173)[b]	89 (72.4)	34 (27.6)	0.0184
CRP > 41.2 mg/L (n=208/270)[c]	150 (72.1)	58 (27.9)	<0.0001

MetS=Metabolic Syndrome. [a]Reference: Zhou F, Yu T, Du R, et al. [b, c]Reference: Yan L, Zhang H-T, Goncalves J, et al.

Supplemental Table S4: Inflammatory Markers stratified by cutoff levels in non-Hispanic Black Patients

Inflammatory markers - no. (%)	MetS	Non-MetS	p-value
Ferritin > 300 ng/mL **(n=181/236)**[a]	127 (70.2)	57 (29.8)	0.6832
LDH > 365 U/L (n=111/233) [b]	80 (72.1)	31 (27.9)	0.3488
CRP > 41.2 mg/L (n=186/232)[c]	138 (74.2)	48 (25.8)	0.0005

MetS=Metabolic Syndrome. [a]Reference: Zhou F, Yu T, Du R, et al. [b, c]Reference: Yan L, Zhang H-T, Goncalves J, et al.

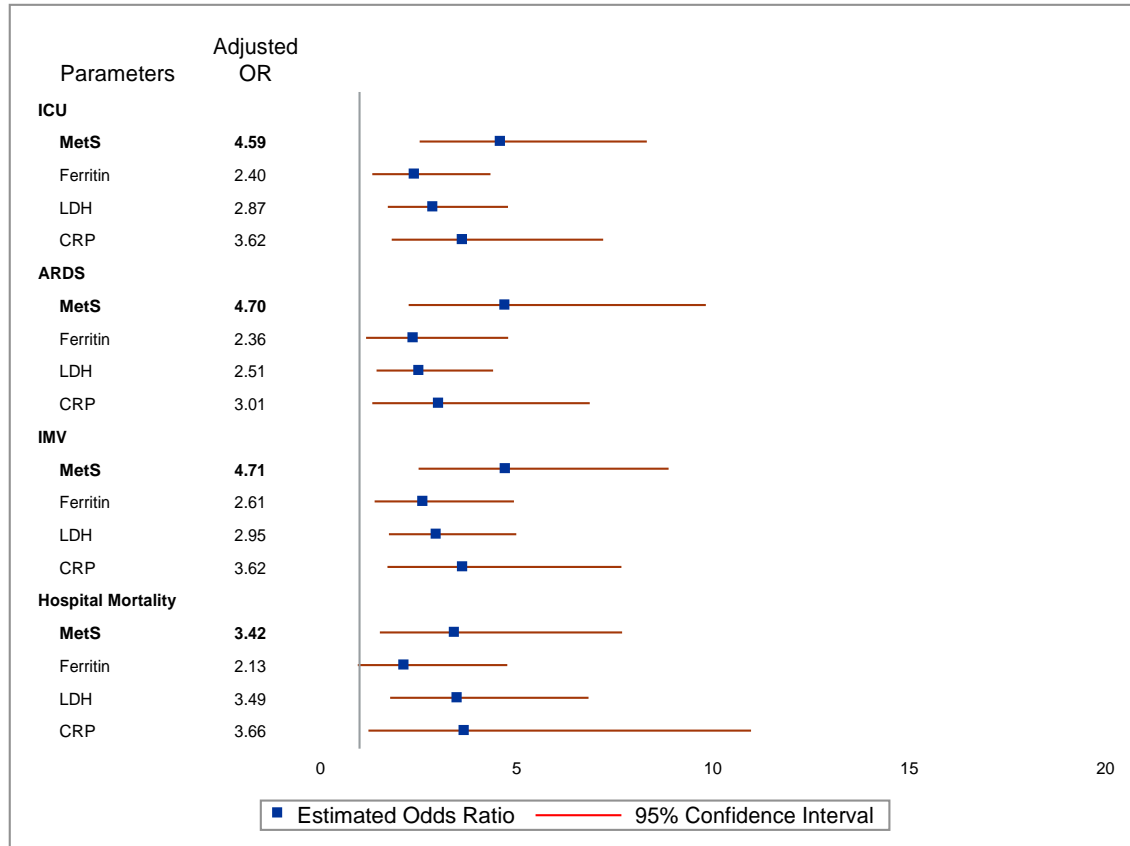**Supplemental Figure S1: Forrest plot of MetS and individual MetS components in Black patients.** Multivariable regression analysis for MetS itself and separate analyses for MetS components were performed in Black patients. All analyses were adjusted for age, sex, race/ethnicity, hospital site, and the Charlson Comorbidity Index. MetS=Metabolic Syndrome, HTN=Hypertension, DM=Diabetes Mellitus, TG=Triglycerides, HDL=High Density Lipoprotein.

Parameters	Adjusted OR
ICU	
MetS	**3.68**
Prediabetes/DM	1.70
Obesity	2.76
HTN	1.31
TG	0.94
HDL	1.96
ARDS	
MetS	**3.91**
Prediabetes/DM	1.26
Obesity	2.88
HTN	1.25
TG	1.59
HDL	2.02
IMV	
MetS	**3.68**
Prediabetes/DM	1.58
Obesity	3.14
HTN	1.58
TG	0.78
HDL	1.49
Hospital Mortality	
MetS	**3.30**
Prediabetes/DM	1.81
Obesity	2.18
HTN	4.12
TG	1.29
HDL	1.17

■ Estimated Odds Ratio ── 95% Confidence Interval

Supplemental Figure S2: Forrest plot of MetS along with inflammatory markers on primary and secondary outcomes Separate multivariable regression analyses for MetS and each inflammatory marker (CRP, LDH, and ferritin) adjusted for age, sex, race/ethnicity, hospital site, and the Charlson Comorbidity Index. MetS=Metabolic Syndrome. Previously described cutoff values shown to correlate with increased disease severity or mortality in COVID-19 were used: CRP > 41.2 mg/L,[22] LDH > 365 U/L,[22] and Ferritin > 300 ng/mL.[1]

Parameters	Adjusted OR
ICU	
MetS	**4.59**
Ferritin	2.40
LDH	2.87
CRP	3.62
ARDS	
MetS	**4.70**
Ferritin	2.36
LDH	2.51
CRP	3.01
IMV	
MetS	**4.71**
Ferritin	2.61
LDH	2.95
CRP	3.62
Hospital Mortality	
MetS	**3.42**
Ferritin	2.13
LDH	3.49
CRP	3.66

■ Estimated Odds Ratio   —— 95% Confidence Interval

Supplemental Figure S3: Forrest plot of MetS along with inflammatory markers in Black patients. Separate multivariable regression analyses for MetS and each inflammatory marker (CRP, LDH, and ferritin) adjusted for age, sex, race/ethnicity, hospital site, and the Charlson Comorbidity Index. MetS=Metabolic Syndrome. Previously described cutoff values shown to correlate with increased disease severity or mortality in COVID-19 were used: CRP>41.2 mg/L[22], LDH>365 U/L[22], and Ferritin>300 ng/mL.[1]