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LETTER

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Is there a racial disparity in coronavirus disease 2019 patients with chronic kidney disease? An experience in New York City

Dear Editor,

Since December 2019, coronavirus 2019 (COVID-19) has spread worldwide.[1] Some data have suggested that the prevalence and mortality of COVID-19 are different among races, even after adjusting for comorbidities and income.[2]

Since chronic kidney disease (CKD) is common, the number of COVID-19 patients with CKD will increase. However, there are scarce data about outcomes in CKD patients. We herein investigated the outcomes from COVID-19 in AAs with CKD compared to those in whites with CKD.

We analysed Mount Sinai Health System (MSHS) medical records up to 5 April 2020, using Epic SlicerDicer software, a tool to abstract deidentified aggregate-level data. We extracted data from patients who had positive for the COVID-19 reverse-transcription polymerase chain reaction (RT-PCR) test. We selected CKD patients based on the 10th revision of the International Statistical Classification of Diseases (ICD-10) code. Comorbidities were extracted using ICD-10 codes. Mortality and intensive care unit (ICU) admission were tracked through 12 April 2020. Relative risks (RR) and 95% confidence interval (CI) in each race stratified by age groups and comorbidities were calculated using a Fisher's exact test. MSHS waived Institutional Review Board approval since this research used only deidentified data.

During the study period, 1269 AAs COVID-19 patients with 105 CKD patients and 1450 whites COVID-19 patients with 80 CKD patients were detected. AAs were younger (median 66, IQR 55-76) than whites (median 75, IQR 65-83) ($P < .001$). There was no significant difference in mortality between AAs and whites (0.65 [0.36-1.15]). This tendency was observed after stratification by age and medical conditions. Similarly, AAs did not have an increased risk of ICU admission (0.84 [0.6-1.18])) even after stratification by age and comorbidities (Table 1).

To the best of our knowledge, this is the first study that compared the risk of severe outcomes among races in CKD patients. Although it has been suggested that there might be racial disparity in COVID-19, our study did not show any significant differences in outcomes, even after stratifying patients by age and comorbidities.

The racial and ethnic diversity in NYC enabled us to investigate differences in outcomes among races in the same cohort. However, our study has several limitations. First, the number of patients was relatively small. Second, we did not access individual data, which prevented us from performing multivariate analyses. Third, extracting CKD patients based on ICD-10 codes may miss patients with albuminuria. Lastly, the fact that AAs were younger might mask differences among races.

In conclusion, AAs with CKD did not have a higher risk of mortality or ICU admission than whites with CKD. This trend was consistent after stratification by age, sex, or comorbidities.

DISCLOSURES

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TABLE 1 Relative risks of ICU admission and death in patients with each race stratified by age and comorbidities

	ICU/ non-ICU	Relative risk	95% CI	Deceased/ alive	Relative risk	95% CI
All						
White	37/43	Reference	Reference	20/60	Reference	Reference
AA	41/64	0.84	0.6-1.18	17/88	0.65	0.36-1.15
Male						
White	27/28	Reference	Reference	15/40	Reference	Reference
AA	23/34	0.82	0.54-1.24	9/47	0.59	0.28-1.23
Female						
White	11/14	Reference	Reference	5/20	Reference	Reference
AA	18/30	0.85	0.48-1.51	8/41	0.82	0.30-2.24
Age ≤ 60						
White	4/5	Reference	Reference	1/8	Reference	Reference
AA	13/26	0.75	0.32-1.76	3/36	0.69	0.08-5.91
Age > 60						
White	33/38	Reference	Reference	19/52	Reference	Reference
AA	28/38	0.91	0.63-1.33	14/52	0.79	0.43-1.45
HTN						
White	33/32	Reference	Reference	16/49	Reference	Reference
AA	37/52	0.82	0.58-1.15	14/75	0.64	0.34-1.21
Non-HTN						
White	4/11	Reference	Reference	4/11	Reference	Reference
AA	4/12	0.94	0.28-3.09	3/13	0.70	0.19-2.63
DM						
White	22/20	Reference	Reference	13/29	Reference	Reference
AA	28/31	0.91	0.61-1.34	14/45	0.77	0.40-1.46
Non-DM						
White	15/23	Reference	Reference	7/31	Reference	Reference
AA	13/33	0.72	0.39-1.31	3/43	0.35	0.10-1.28
IHD						
White	12/17	Reference	Reference	9/20	Reference	Reference
AA	19/15	0.95	0.62-1.46	10/24	0.95	0.45-2.01
Non-IHD						
White	20/31	Reference	Reference	11/40	Reference	Reference
AA	22/49	0.79	0.49-1.29	7/64	0.46	0.19-1.10
HF						
White	9/4	Reference	Reference	6/7	Reference	Reference
AA	19/13	0.86	0.54-1.36	6/26	0.41	0.16-1.03
Non-HF						
White	28/39	Reference	Reference	14/53	Reference	Reference
AA	22/51	0.72	0.46-1.13	11/62	0.72	0.35-1.48
Afib						
White	9/7	Reference	Reference	6/10	Reference	Reference
AA	4/5	0.79	0.34-1.85	4/5	1.19	0.45-3.11
Non-Afib						
White	28/36	Reference	Reference	14/50	Reference	Reference
AA	37/59	0.88	0.61-1.28	13/83	0.62	0.31-1.23

Abbreviations: AA, African American; Afib, atrial fibrillation CI, confidence interval; DM, diabetes mellitus; HF, heart failure; HTN, hypertension; ICU, intensive care unit; IHD, ischaemic heart disease.