Racial Disparity in COVID-19 Severity in Prostate Cancer Patients

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Introduction

Research has shown that African American cancer patients with COVID-19 have experienced higher hospitalization rates compared to their Caucasian counterparts.[1-3] Our study focuses on COVID-19 hospitalization rates in patients with prostate cancer. Statistics have shown that African American men are 50% more likely to develop prostate cancer in their lifetime and twice as likely to die from prostate cancer as Caucasian men. Thus, one speculation is that racial differences in COVID-19 severity among prostate cancer patients are attributable to African American men having a higher prevalence of prostate cancer and a greater risk of severe outcomes. This study aimed to assess racial disparities in Louisiana's COVID-19 hospitalization among prostate cancer patients.

Table 1: Characteristics of Prostate Cancer Patients with COVID-19 and COVID-19 Hospitalization

		N	# Admitted to hospitals with COVID diagnosis	% Admitted	Chi-sq p-value
Race					
	Non-Hispanic White	647	108	16.7%	
	Non-Hispanic Black	421	127	30.2%	
Age					<.0001
	20-49	13	4	30.8%	
	50-64	344	49	14.2%	
	65-79	597	146	24.5%	
	80+	114	36	31.6%	
Year_diagnosis					
	2015	188	45	23.9%	
	2016	195	38	19.5%	
	2017	215	57	26.5%	
	2018	260	53	20.4%	
	2019	210	42	20.0%	
Poverty - used census tract at the time of COVID diagnosis					
	0% - <10% poverty	212	31	14.6%	
	10% - <20% poverty	331	79	23.9%	
	>20% poverty	379	94	24.8%	
	Unknown poverty	146	31	21.2%	
# of comorbid conditions					<.0001
	0	329	21	6.4%	
	1-2	316	54	17.1%	
	3+	423	160	37.8%	
All		1068	235	22.0%	

Table 2: The Association of Sociodemographic Factors and Chronic Diseases with COVID-19 Related Hospitalization

	Unadjusted Odds Ratio				Adjusted Odds Ratio		
	Estimate	95% UCL	95% LCL	Wald	Estimate	95% UCL	95% LCL
Race (ref = Non-Hispanic White)							
Non-Hispanic Black	2.157	1.605	2.899	<.0001	2.673	1.884	3.79
Age (ref = 50-64)							
65-79	1.949	1.366	2.78	0.0002	1.774	1.201	2.621
80+	2.779	1.69	4.569	<.0001	2.712	1.548	4.751
Diagnosis Year (ref = 2015)							
2016	0.774	0.475	1.26	0.3028	0.763	0.451	1.293
2017	1.118	0.711	1.76	0.6282	1.321	0.806	2.165
2018	0.828	0.527	1.301	0.4125	0.895	0.547	1.466
2019	0.737	0.454	1.195	0.2161	0.831	0.491	1.409
Poverty (ref= 0-<10% poverty)							
10% - <20% poverty	1.998	1.246	3.203	0.0041	1.553	0.936	2.578
>20% poverty	2.07	1.304	3.287	0.002	1.169	0.698	1.958
Unknown poverty	1.734	0.988	3.045	0.0552	1.377	0.745	2.545
# of Comorbid conditions (ref = 0)							
1-2	2.897	1.7	4.937	<.0001	3.077	1.786	5.302
3+	8.701	5.361	14.123	<.0001	8.219	4.998	13.517

Results

RESULTS: Of 1,068 COVID-19 prostate cancer patients, 39.4% were African American and 60.6% Caucasian. African American men with prostate cancer were more likely ($P<0.05$) to be hospitalized with COVID-19. The odds of hospitalization were more than 2x higher among African American patients compared with Caucasian patients. After adjusting for age, poverty and chronic illnesses, the odds of hospitalization were still higher for African American than Caucausian patients (OR=2.673; 95% CI: 1.88-3.79).

Conclusion

Sociodemographic factors and chronic illnesses are associated with increased chance of hospitalization for COVID-19 among prostate cancer patients. We have seen that African American COVID-19 prostate cancer patients have significantly higher odds of hospitalization even when controlling these factors. More research is warranted to determine underlying factors of the observed racial disparities.

References

[1] JAMA 2020; 323:1061-9
[2] CDC, COVID-19: work & school page, updated Mar 1, 2022.
[3] Ann Intern Med 2021 Mar; 174(3): 362-373