

Cancer, transplantation, and other immunocompromising conditions were not significantly associated with severe COVID-19 or death in hospitalized COVID-19 patients in Chicago

The University of Chicago ID COVID Consult Service Study Group

Poster P141

Abstract # 4938047

Background

- Cancer, transplantation, HIV and other immuno-deficient conditions have been associated with a higher risk of more severe COVID-19 illness in hospitalized patients.¹⁻³

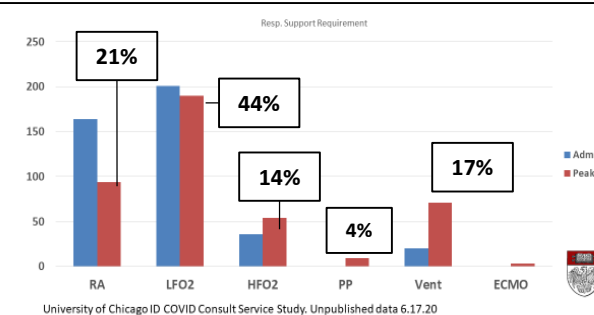
Methods

- We conducted a structured retrospective chart review and electronic data mart extraction of the first 401 patients on the ID Consult Service at the University of Chicago Hospitals from March 13-April 18, 2020.
- Severe COVID-19 illness:** oxygen requirement of high flow (nasal cannula, mask, or rebreather), use of positive pressure device (helmet, CPAP, other), intubation and mechanical ventilation, ECMO, or death (all cause).
- Inclusive disease definitions included past and current CA, chemotherapy within past 3 months, any HIV, and current use of immunosuppressive therapies & steroids >10 mg/d prednisone.
- Chi-square, univariate & multivariate logistic regression analyses were used for significant associations between baseline demographics, co-morbidities, and COVID-19 clinical syndromes and the development of severe COVID illness.

Demographics

	All Patients 401	
	N	%
Age	60.31	17.46
<18	3	1%
18-29	15	4%
30-39	35	9%
40-49	49	12%
50-59	84	21%
60-69	88	22%
70-79	69	17%
80+	58	14%
Sex		
Female	209	52%
Race		
Asian/Mideast Indian	4	1%
Black/African-American	360	90%
More than one Race	7	2%
Unknown	5	1%
White	25	6%
Ethnicity		
Hispanic/Latino	9	2%
Not Hispanic/Latino	388	97%
Unknown	4	1%
Zip Code: Chicago South Side		
60637,60615,60653,60649,60617, 60619, 60620,60628,60621, 60636,60629, 60638, 60632,60609, 60632	299	75%

Admission & Peak O₂ Requirement



Mortality

	ALL Pts		Moderate Illness		Severe Illness		p value
	N	%	N	%	N	%	
Total number of admissions, managed by COVID ID team	401		237		164		
Total number of pts discharged (as of 4/18)	232	58%	180	76%	52	32%	<0.0001
Total number of deaths at 30d post discharge (as of 5/18/20)	51	13%	4	2%	47	29%	<0.0001
Re-admissions	9	2%	7	3%	2	1%	0.32

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Co-Morbid Conditions

Co-Morbid Conditions	All Patients 401		Moderate Illness 233 (60%)		Severe Illness 168 (40%)		p value
	N	%	N	%	N	%	
HTN	276	69%	147	63%	129	77%	0.004
DM	152	38%	76	33%	76	45%	0.02
Obese I/II	133	34%	75	33%	58	35%	0.74
Obese III	69	17%	41	18%	28	17%	0.89
CKD	96	24%	43	18%	53	32%	0.003
COPD	90	23%	50	22%	40	24%	0.63
CHF	65	16%	30	13%	35	21%	0.04
Cancer	56	14%	31	13%	25	15%	0.76
CAD	53	13%	27	12%	26	16%	0.33
Hgb Dx	5	1%	3	1%	2	1%	1
Liver Dx	16	4%	10	4%	6	4%	0.92
Autoimmune	27	7%	15	6%	12	7%	0.93
Immuno supp.	21	5%	11	5%	10	6%	0.74
Steroid	17	4%	7	3%	10	6%	0.23
Chemo (for CA Pts only)	13	4%	7	3%	6	4%	1
Solid Organ Transplant	9	2%	3	1%	6	4%	0.17
HIV	8	2%	7	3%	1	1%	0.15
Stem Cell Tx	4	1%	2	1%	2	1%	1
Immunocompro -mised (red font)	55	14%	31	13%	24	14%	0.89

Limitations: Retrospective chart review; single site with small numbers; inclusive definition of immunocompromising conditions.

Conclusions: In a cohort of mostly Black Chicagoans with COVID-19, age > 60, HTN, DM, CKD, CHF and obesity were associated with severe illness, which occurred in 40% of patients. 17% were intubated, 65% needed only room air or low flow O₂, & 13% died by 30 days post d/c. Age > 70 years was the strongest predictor of severe illness by multivariate analysis. **Cancer (current or past), current chemotherapy, transplant, current immuno-suppressive therapy, HIV, & autoimmune dx were not associated with severe illness.** Large aggregated cohorts for each condition are needed to more precisely address risk of severe COVID-19 illness.

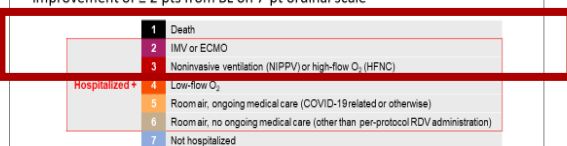
Discussion: The Chicago Dept. of Health reported a 2-3x increased mortality rate among Black Chicagoans, 153/100,000 vs 59/100,000 in whites.⁴ Our findings argue against a biologic susceptibility to COVID-19 among Black patients, and suggest that a lower mortality rate (13% at 30d post d/c) is achievable in US Black patients with COVID-19 with access to effective treatment & supportive care.



AT THE FOREFRONT
UChicago
Medicine

Severe COVID-19 Illness

- Hospital discharge
- Clinical improvement, defined as live discharge from hospital and/or an improvement of ≥ 2 pts from BL on 7-pt ordinal scale



Antiviral & Immunomodulating Rx

	ALL patients 401	
	mean/N	sd/%
HCQ Alone	60	15%
HCQ+LPV/r	66	17%
RBV + HCQ	10	3%
Remdesivir	122	31%
TCZ	83	21%
Corticosteroids (>10mg prednisone)	36	9%
Other Immunosuppressive*	12	3%

* cyclosporine, azathioprine, methotrexate, tacrolimus, serolimus, everolimus, mycophenolate
University of Chicago ID COVID Consult Service Study, Unpublished data 7.20.20