

## Peer Review File

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### Reviewer A

Overall: The goal of this paper was to describe specific predictors of mortality among COVID-19 patients who were African American and had cancer by comparing predictors in those with cancer and those without. However, there didn't seem to be a strong focus on African American patients, other than that they are the majority represented in the Howard hospital system. Although the sample size would be small, restricting the analysis to only African American patients would help clarify predictors in this specific population. Specific comments below:

**Reply:** Appreciate for your time in reviewing our manuscript. We highly value your comments and the suggestions.

**Changes in the text:** None

Abstract:

**Comment:** Which data is epidemiological? If just using HER data, then delete

**Reply:** We expected and aimed to see if our study population has any effect of mortality, based on their cancer incidence and distribution. We understand your point here and made changes accordingly.

**Changes in the text:** Removed the word "epidemiological" and changed it to demographic in line 44

**Comment:** In abstract, specify if pulled data from non-AA samples as well

**Reply:** We did investigate all the cancer patients at our hospital, admitted with COVID-19 and did not particularly specify on collecting data from one race. Methods section has clear information on this.

**Changes in the text:** None

**Comment:** Fix typo in Results section of abstract

**Reply:** Corrected

**Changes in the text:** Removed in line 53

**Comment:** Define AST

**Reply:** abbreviation detailed in the text

**Changes in the text:** Defined AST in line 65

**Comment:** Didn't do a test to examine AAs specifically, so shouldn't make conclusions about variables specific to AAs

**Reply:** We understand your point here

**Changes in the text:** changed it to "cancer" patients rather than "African American" in the abstract conclusion section, in line 68

Intro

**Comment:** Need citation for "Minorities, particularly African Americans are mostly uninsured and underserved with chronic medical conditions" Also, suggest changing it

to “minority populations”

**Reply:** Modified accordingly and added the reference

**Change in the text:** Line 108, removed African Americans and changed it to Minority populations.

**Comment:** It seems like the setup for the paper is to examine patients with COVID-19 and cancer in general, and the rationale is not strong for examining AAs in particular.

**Reply:** Agree with the comment, but our study cohort has mostly AA's. 83.6% in the cases.

**Changes in the text:** none

**Comment:** Include more of a discussion on what the potential predictors (e.g., biological variables, social factors, etc.) of mortality are for cancer. Also what is the hypothesis?

**Reply:** Thank you for your valuable feedback. Considering the nature of our study, which was observational in design, we aimed to analyze the available data from the EHR at our institute to explore associations between different variables and mortality outcomes. Our primary hypothesis was to investigate the potential predictors of mortality in cancer patients, encompassing a range of factors that could contribute to disease progression and overall survival. We performed statistical analyses on the collected data, enabling us to identify significant associations and quantify the relationships observed.

**Changes in the text:** none

**Comment:** Do you mean “demographic” rather than “epidemiological”?

**Reply:** Yes

**Changes in the text:** Changed epidemiological to demographic in line 118

Method

**Comment:** Figure 1, consider updated “Dead” to “Deceased”

**Reply:** Updated the wording in the figure

**Changes in the text:** Changed wording in the Figure 1 – dead to deceased.

**Comment:** There should be more description on the chart review and data extraction. For example, specify whether clinical data and lab results for the patient were only extracted from the hospitalization for the COVID-19 diagnosis, or were all encounters during 2019-2021 included.

**Reply:** Only from the initial encounter/initial hospitalization

**Changes in the text:** Changes made in line 129 – added “from the initial hospitalization.”

**Comment:** Need a section on measures to describe the variables that specific variables that were analyzed in the study

**Reply:** The variables that used in the analysis are mostly reported in the table 1; All variables are as follow:

Race, AGE, smoking, BMI, Sex, CHF, CAD, Diabetes Mellitus, HTN, Asthma, COPD, Renal Disease, Immunocompromised, Diarrhea, Aguesia, Loss of appetite, Vomiting, Anosmia, RHINORRHEA, COUGH, SOB, Headache, Myalgia, Fatigue, Abdominal pain, Fever, LDH, Troponin, CRP, D-dimer, Ferritin, Procalcitonin,

Fibrinogen, Sodium, Potassium, Chloride, HCO<sub>3</sub>, Creatinine, BUN, Glucose, IL-6, INR, Hemoglobin, WBC, Neutrophils, Lymphocytes, Eosinophils, Platelets, Magnesium, AST, ALT, ALP, Bilirubin, Total Protein, Albumin, Vancomycin, Ceftriaxone, Hydroxychloroquine, Azithromycin, Anticoagulants, Remdesivir, Tocilizumab, Vasopressors, Steroids, ARB, ACEI, Complications, ICU Admission, Cancer status , Type of Cancer, Staging of Cancer ,Status of Anti-cancer treatment ,Metastasis, Mechanical Ventillation, Temperature at admission, Systolic Blood Pressure at admission, Diastolic Blood Pressure at admission, O<sub>2</sub> Sat at admission, Supplemental Oxygen, CXR, ICU Transfer

**Changes in the text:**

**Comment:** Include which version of SPSS and cite

**Reply:** SPSS version 26

**Changes in the text:**

**Comment:** In Statistical analysis section, specify which variables were risk factors and compared or controlled for in the model

**Reply:** Except for demographic variables such as sex, age, race, ...etc. Other factors are potentially risk factors and being compared between cases and controls.

**Changes in the text:**

Results

**Comment:** If not included in the statistical analysis section, specify which statistical test was used when presenting the results. Be clear about which covariates were controlled for in the models.

**Reply:** Included in the statistical analysis section

**Changes in the text:** Simple and Multiple logistic regression, Chi-squared testing, parametric and non-parametric hypothesis testing were performed as statistical methods.

- In Table 1:

**Comment:** specify metric for length of hospital stay

**Reply:** Added the metrics to the table

**Changes in the text:** Added metrics (days) to Table 1 for Length of hospital stay.

**Comment:** define CAD, AST, and ALT

**Reply:** Abbreviations defined

**Changes in the text:** Abbreviations defined in line 265, 266 and in the Table 1

**Comment:** specify timing of labs elevated or decrease (over current hospital stay?)

**Reply:** Yes, labs from the current hospital stay

**Changes in the text:** Added Labs elevated/decreased “(Hospitalization/Initial encounter)” in the Table 1

**Comment:** In Table 2, add a footnote of which statistical test was used to determine p value and that the comparison is between living and deceased

**Reply:** The p-value is based on the Chi-squared testing and comparing survival between the specified categories.

**Changes in the text:**

**Comment:** It's unclear what the rationale is for comparing active vs. previously diagnosed cancer patients.

**Reply:** Thank you for raising the question. One of the main objectives of our research was to investigate whether active cancer patients who were undergoing chemotherapy or were immunosuppressed faced a higher risk of mortality when exposed to COVID-19, as compared to previously diagnosed cancer patients who were in a different treatment phase or in remission. By examining this comparison, we aimed to shed light on the potential impact of ongoing cancer treatment and immunosuppression on the outcomes of COVID-19 in cancer patients.

**Changes in the text:** none

**Comment:** It might be helpful to move the second paragraph ("Myalgia and fatigue significantly common among cancer patients compared to non-cancer patients:") to become the first paragraph since it includes the results of the primary research question of examining mortality between cancer and cancer-free patients

**Reply:** Moved

**Changes in the text:** Moved the paragraph as advised.

**Comment:** The results are a bit confusing to read because it's unclear what the primary outcomes are vs what are covariates. Updating this in methods section and consistently presenting the measures in the results would improve readability.

**Reply:** We appreciate your feedback regarding the presentation of our findings. As mentioned in the methods section of our paper, we conducted a comparative analysis of all risk factors between the cases and the controls, as appropriate for an observational study. This allowed us to examine the association of each variable of interest between the two groups. Subsequently, we performed statistical analysis and presented the relevant findings in the results section, striving to present them in the most effective manner possible. We believe we have adequately addressed the objectives of our study and provided a comprehensive assessment of the associations observed.

**Changes in text:** none

**Comment:** There is a Table 3 listed in the results but not in the paper

**Reply:** Agree with you, we have removed that

**Changes in text:** Removed "Table-3" from the line 270

Discussion

**Comment:** If albumin was a variable of interest in the beginning, some of this literature that was reviewed in the discussion should be included in the intro to set up the study.

**Reply:** We admit that our initial introduction did not include a discussion on the relationship between Albumin and cancer patients exposed to COVID-19. This omission was due to the limited data available at the time regarding Albumin as a risk factor in this specific context. However, during our analysis, we observed a significant association between Albumin levels and the outcomes in our study population. Consequently, we believe that these findings merit inclusion and discussion in the subsequent sections of our paper, particularly in the discussion section where we can provide a comprehensive exploration of its implications and potential clinical significance.

**Changes in the text:** none

**Comment:** Poor discussion of the significance of these results for African American cancer patients.

**Reply:** We acknowledge that our analysis did not specifically consider the subgroup of African Americans (AA) separately. However, it is important to note that the majority of individuals in our cohort were of African American descent. Therefore, we believe that the overall results obtained from our analysis will reasonably reflect the experiences and characteristics of the African American population within our study.

**Changes in the text:** none

## Reviewer B

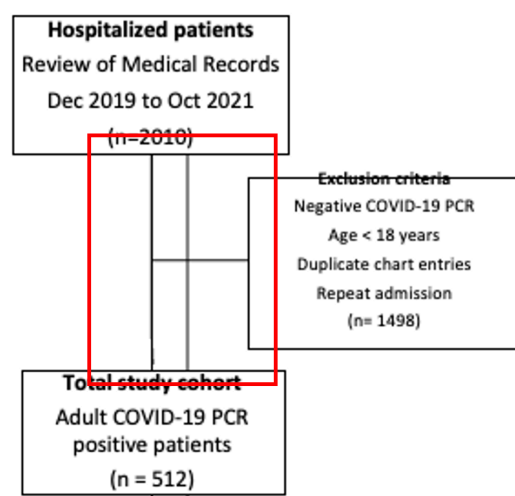
Figures and tables

- (1) We only found 2 tables in the manuscript while you said 3 tables. Please check again.

Total number of figures and tables: 1 figures, 3 tables

We have one figure and two tables

- (2) Please provide an editable Figure 1 in a standalone Word file.
- (3) The flow is a little bit confusing in Figure 1, please also revise. And please use arrows lines to draw the figure.



Done

- (4) Please double-check below data in Table 1.

$83.6+12.2+0.4=96.2(\neq 100)$

African American	41 (83.6)
White	6 (12.2)
Hispanic/Latino	0 (0)
Asian	0 (0)
Others/unknown	2 (0.4)

Done

- (5) Please check through all figures and tables and make sure that all abbreviations have been defined in each legend. For example, please provide the full names

of “Covid-19” “ICU” in the legend of Table 1.

Done

- (6) Please double-check below data in Table 2. Please also check all percentages in your Table 2. The data are too confusing.

$$3+5+1=9 (\neq 10)$$

3 (17.6)
5 (25)
1 (50)

Done