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## Smoking and Other Determinants of COVID Severity Among Cancer Patients

Sameh Gomaa  
*Thomas Jefferson University*

Lindsay Wilde, MD  
*Thomas Jefferson University*

Tara Rakiewicz  
*Thomas Jefferson University*

Kuang-Yi Wen  
*Thomas Jefferson University*

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# Smoking and other determinants of COVID-19 severity among cancer patients

Gomaa S., Wilde L., Rakiewicz T., Zhan T., Wen K.

Department of Medical Oncology, Division of population science, Sidney Kimmel Cancer Center, Thomas Jefferson University, Philadelphia, PA

## Introduction

- Cancer patients might be more susceptible to COVID-19 infection.
- With a higher incidence of acute complications, severe disease and higher mortality rates.
- Identifying factors contributing to severe disease remains essential to avoid the risk of severe and often fatal COVID-19 exposure.
- We report on the predisposing factors for severe COVID-19 and increased hospitalization burden in cancer patients at the Sidney Kimmel Cancer Center (SKCC) in Philadelphia.

## Methods

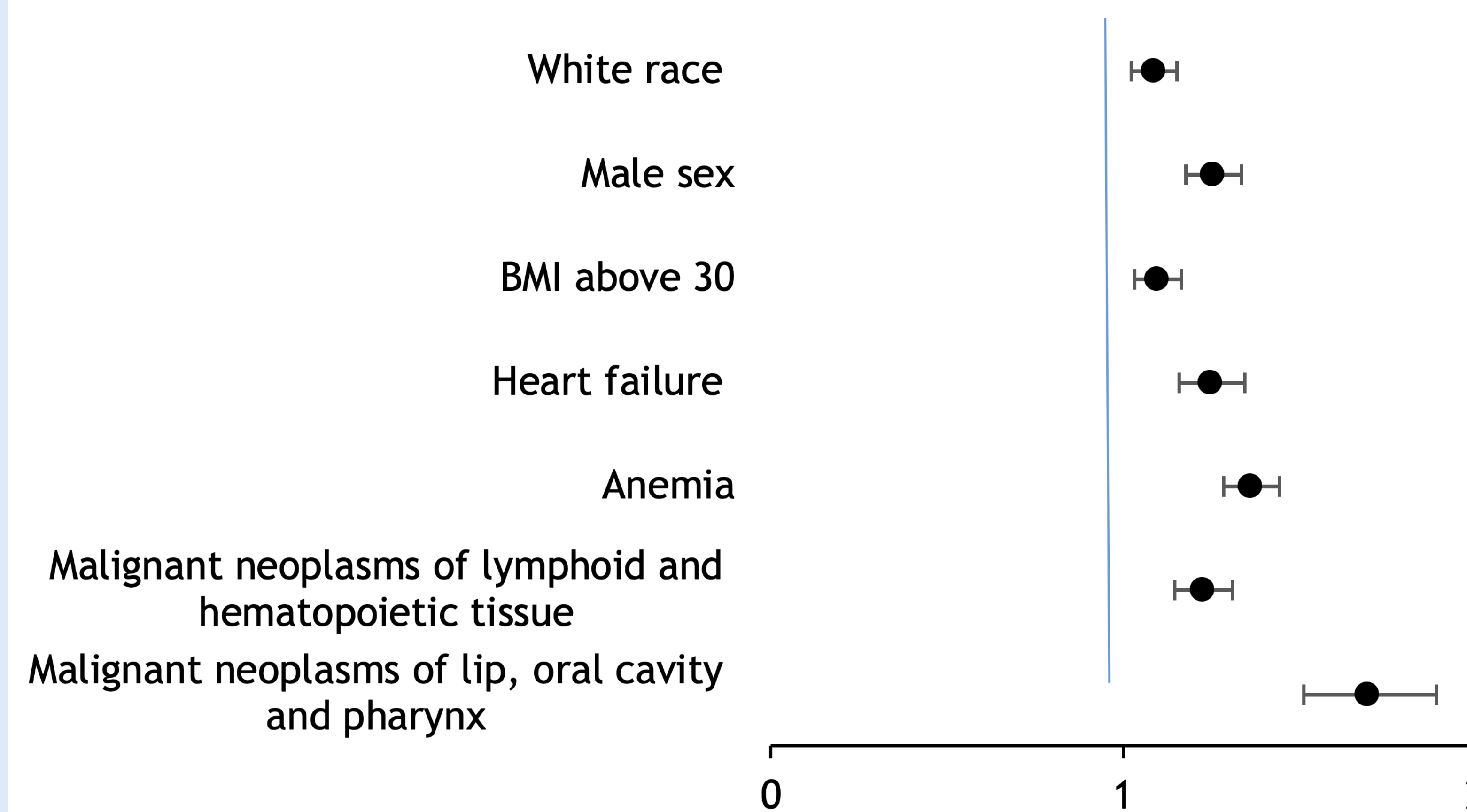
- This is a retrospective chart review from December 2019 until May 2021.
- Data was collected through a data query to Thomas Jefferson's electronic business intelligence.
- Results included demographic information,
- Cancer Diagnosis ICD-10 (C00-D49). Comorbidities,
- COVID-19 severity is defined by hypoxemia and the use of assisted ventilation.
- Lastly inpatient arrhythmias and sepsis.
- The endpoints were analyzed using a multivariable logistic regression model.
- Results are interpreted in terms of the odds ratio.

## Acknowledgments

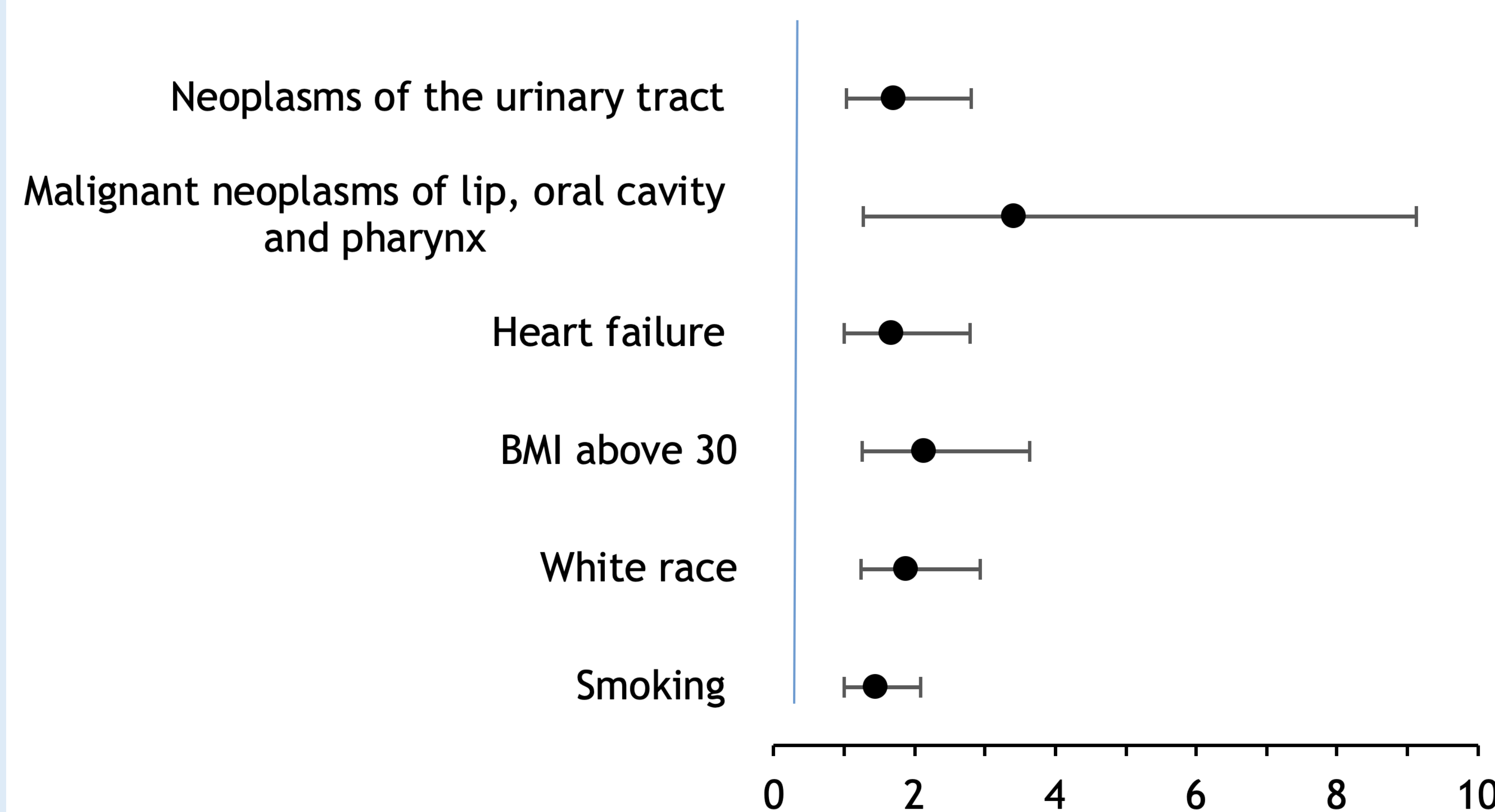
This project was supported by the Cancer Center Cessation Initiative (C3i) launched by the National Cancer Institute (C3i)

Cancer patients are vulnerable to severe COVID-19. Cancer type, associated comorbidities, and lifestyle characteristics can affect the risk of hospitalization, length of hospital stay, and severe COVID defined by the use of assisted ventilation and hypoxia.

### Risk of Proplonged hospital stay



### Increased risk of severe COVID-19



## Results

- **Increased risk of a prolonged hospital stay** were associated with:
  - Malignant neoplasms of lip, oral cavity and pharynx 1.692 (1.514-1.890) P= 0.001
  - Malignant neoplasms of lymphoid and hematopoietic tissue 1.226 (1.147- 1.310) P= 0.001,
  - Anemia 1.360 (1.284-1.442) P=0.001,
  - Heart failure 1.248 (1.159~1.344) P= 0.001
  - BMI above 30, 1.096 (1.031-1.165) P=0.003
  - Male sex 1.253 (1.177~1.335) P=0.001
  - White race 1.087 (1.024~1.153) P=0.006
- **Increased risk of severe COVID-19 (Hypoxemia and use of assisted ventilation)** is associated with:
  - **Smoking** 1.450 (1.006-2.090) P=0.005,
  - White race 1.883 (1.231~2.924) P=0.004,
  - BMI above 30, 2.135(1.253~3.638) P= .005
  - Heart failure 1.675 (1.004-2.795) P=0.048
  - Malignant neoplasms of lip, oral cavity and pharynx 3.416 (1.278-9.130) P=0.014
  - Neoplasms of the urinary tract 1.694 (1.026-2.797) P=0.

## Conclusion

- Cancer patients are vulnerable to severe COVID-19. cancer type, associated comorbidities, and lifestyle characteristics can affect the risk of hospitalization, length of hospital stay, and severe COVID defined by the use of assisted ventilation and hypoxia.
- Precautionary measures should be taken based on their specific clinical characterization.
- Tailored needs should be validated in future research