



## **Poster 37: Assessment of malignancy type-specific COVID-19 case-fatality in the United States**

Andrew Vallejo, MD - University of Southern California

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Topic: Ovarian

### **Objectives**

To examine the mortality of patients with malignancy who had a diagnosis of coronavirus disease 2019 (COVID-19) infection during the early pandemic in the United States.

### **Methods**

This is a retrospective cohort study using the Healthcare Cost and Utilization Project's National Inpatient Sample. The study population was hospital admissions with the diagnosis of COVID-19 from April to December, 2020. The exposure was malignancy type identified per the National Cancer Institute definition and grouped according to the American Cancer Society classification (42 types in 17 systems). The main outcome measure was covid-19 in-hospital case-fatality, defined as mortality that occurred during the index hospital admission. A multivariable binary logistic regression model was used to assess case-fatality by fitting patient demographics, comorbidity, malignancy type, and hospital parameters.

### **Results**

Among 21,009,711 hospital admissions, 1,622,755 (7.7%) had a diagnosis of COVID-19, of which the mortality rate was 12.9% (median time-to-death, 5 days [IQR 2-11]). Frequently reported morbidities ( $\geq 5.0\%$ ) in the COVID-19 affected patients included pneumonia (74.3%), respiratory failure (52.9%), cardiac arrhythmia / arrest (29.3%), acute kidney injury (28.0%), sepsis (24.6%), shock (8.6%), cerebrovascular accident (5.2%), and venous thromboembolism / pulmonary embolism (5.0%). A total of 76,655 (4.7%) patients had malignancy in the COVID-19 group; these patients had a 33% increased mortality risk compared to those without malignancy (17.9% vs 12.7%, adjusted-odds ratio [aOR] 1.33, 95% confidence interval [CI] 1.30-1.36). In addition, early study period, older age, male gender, Native American, morbid obesity, higher comorbidity index, lower household income, and Northeastern region were associated with increased COVID-19 case-fatality in a multivariable analysis. Among the 782,020 female patients with COVID-19 infection, patients with malignancy were 47% more likely to die compared to those without cancer (16.4% vs 11.0%, aOR 1.47, 95%CI 1.42-1.51). Of those, there were 5 malignancies in which the fatality risk was greater than two-fold higher. These included anal cancer (in-house fatality rate 23.8%, aOR 2.94), Hodgkin lymphoma (19.5%, aOR 2.79), non-Hodgkin lymphoma (22.4%, aOR 2.23), lung cancer (24.3%, aOR 2.21), and ovarian cancer (19.4%, aOR 2.15). (Figure 1)

### **Conclusions**

This national-level analysis confirmed the substantial mortality among patients with COVID-19 in the early pandemic experience in 2020 in the United States. In gynecologic malignancy, patients with ovarian cancer had particularly high COVID-19 case-fatality risk.

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