

SARS-CoV-2 Infection in Veterans with Lung Cancer

May 2021

Fact Sheet: Data on Veterans Using VA Health Care

CSPEAR provides timely epidemiologic information on VA health care users. This fact sheet presents summary data to inform a broad community of VA leaders, investigators, and clinicians as they consider how best to address the needs of Veterans.

Introduction: Lung cancer patients are considered a high-risk group for infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and progression to severe coronavirus disease 2019 (COVID-19).^{1,2} Immune system suppression, chronic pulmonary inflammation, comorbidities, and smoking may make these patients more susceptible to severe illness.^{1,2} This fact sheet presents information on Veterans who tested positive for SARS-CoV-2 infection, comparing those with and without a lung cancer diagnosis. **Population:** Veterans who are active users of Veterans Health Administration (VHA) health care, who tested positive for SARS-CoV-2 infection and whose index date fell between 03/01/2020 and 03/03/2021 (N=209,682). **Data Sources:** Data were pulled from the VA Corporate Data Warehouse. COVID-19 data originate from the VA COVID-19 Shared Data Resource.³ **Notes:** This work was conducted under the auspices of CSPEAR's operational access to VA data. This material is the result of work supported with resources and the use of facilities at the VA Cooperative Studies Program Epidemiology Centers in Durham, NC and Seattle, WA. The contents do not represent the views of the US Department of Veterans Affairs or the US Government.

Demographics of SARS-CoV-2-Positive Veterans

Characteristic	Lung cancer (n=2,857)	No lung cancer (n=205,822)
Age (years), n (%)		
18-34	<11*	17,384 (8.4%)
35-49	26 (0.9%)	36,373 (17.7%)
50-64	376 (13.2%)	56,600 (27.5%)
65-74	1,387 (48.5%)	56,761 (27.6%)
75-84	798 (27.9%)	26,248 (12.8%)
85+	265 (9.3%)	12,456 (6.1%)
Sex, n (%)		
Female	92 (3.2%)	21,118 (10.3%)
Male	2,765 (96.8%)	184,704 (89.7%)
Primary Race, n (%)		
American Indian/Alaska Native	13 (0.5%)	1,960 (1.0%)
Asian	11 (0.4%)	2,083 (1.0%)
Black/African American	536 (18.8%)	46,046 (22.4%)
Native Hawaiian/Pacific Islander	16 (0.6%)	1,952 (0.9%)
White	2,156 (75.5%)	137,443 (66.8%)
Ethnicity, n (%)		
Hispanic or Latino	118 (4.1%)	20,798 (10.1%)
Not Hispanic/Latino	2,656 (93.0%)	176,749 (85.9%)

*To protect patient privacy, all counts less than 11 have been reported as '<11'.

Fast Facts

- Of the Veterans with a record of a positive SARS-CoV-2 test, 2,857 had a diagnosis of primary lung cancer and 205,822 with no lung cancer diagnosis.
- Compared with SARS-CoV-2-positive patients without lung cancer, a larger proportion of lung cancer patients had a history of smoking, chronic kidney disease, chronic obstructive pulmonary disease, hypertension, and ischemic heart disease.
- 36.1% of lung cancer patients and 15.3% of non-lung cancer patients were admitted as inpatients within 60 days of a positive SARS-CoV-2 test.
- A greater proportion of lung cancer patients than non-lung cancer patients received COVID-19-related treatments and had serious clinical outcomes, such as hospitalization, mechanical ventilation, intensive care unit admission, and death.
- SARS-CoV-2-positive lung cancer patients were more likely to receive cancer therapy before their index date than after.
- The length of hospitalization for lung cancer patients was higher than in non-lung cancer patients (median of 6 and 5 days, respectively).

Definitions

Lung cancer patients: Patients with a current or prior lung cancer diagnosis, defined as having ≥ 1 inpatient or ≥ 2 outpatient diagnosis codes in the primary or secondary diagnostic position in the medical record since 1/1/2010⁴

SARS-CoV-2-positive patients: Patients who have tested positive for SARS-CoV-2 infection according to the VA National Surveillance Tool

Index date: First positive SARS-CoV-2 test or the hospital admission date closest to first positive test in the 15 days prior

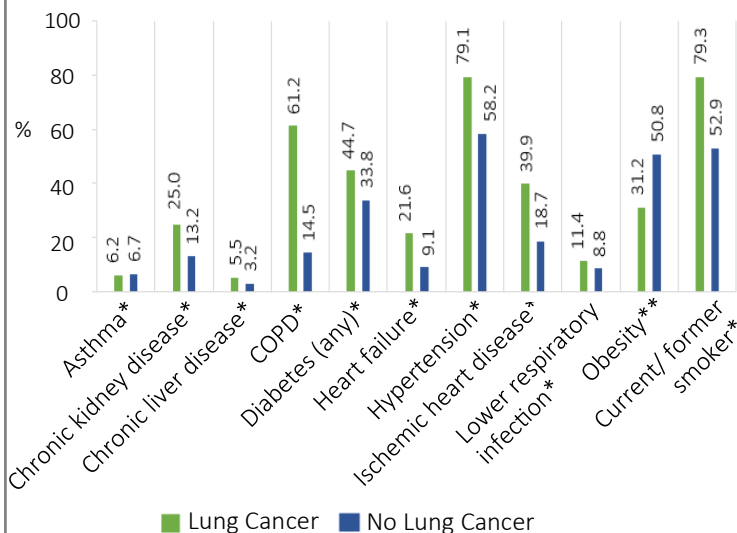
Visit [CSPEAR's website](https://www.cspear.va.gov) or contact CSPEAR@va.gov for more information.

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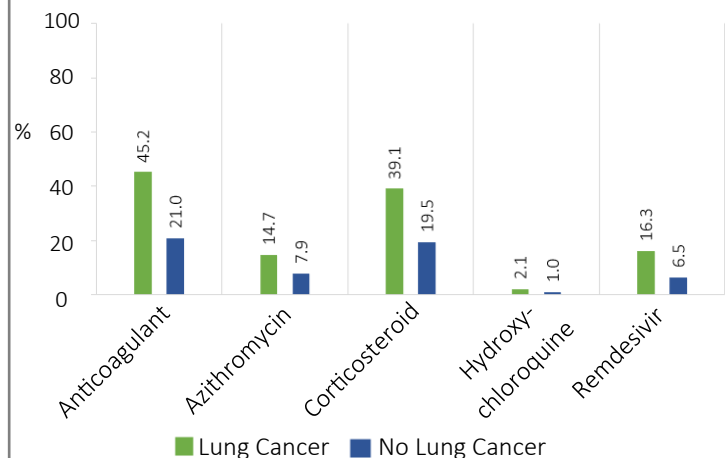
U.S. Department of Veterans Affairs
Veterans Health Administration
Cooperative Studies Program

Comorbidities and Smoking Status among SARS-CoV-2-Positive Veterans



*2 years prior to index date **Closest record to index date

COVID-19 Treatment among SARS-CoV-2-Positive Veterans

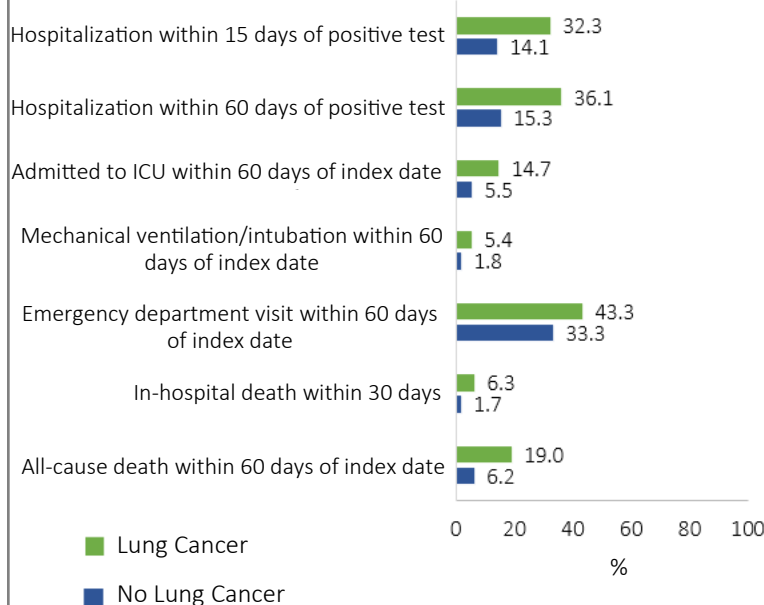


Lung-Cancer-Specific Treatment Received among SARS-CoV-2-Positive Veterans with Lung Cancer

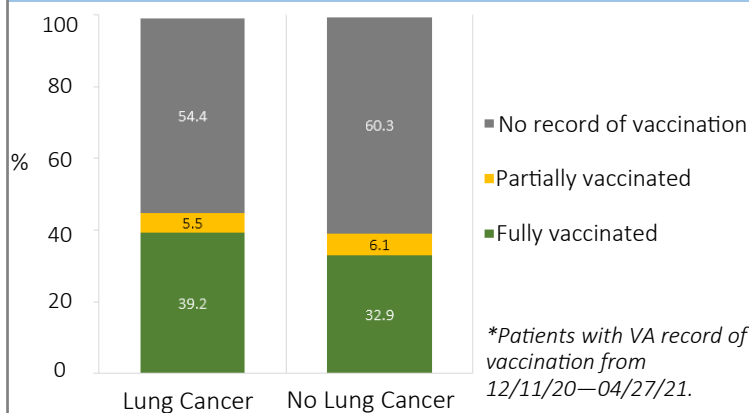
Treatment received since 03/01/18	% treated before index date*	% treated after index date	Total % treated
Surgery	296 (10.4%)	70 (2.5%)	364 (12.7%)
Chemotherapy	498 (17.4%)	282 (9.9%)	615 (21.5%)
Radiation therapy	73 (2.6%)	24 (0.8%)	93 (3.3%)
Immunotherapy	538 (18.8%)	287 (10.0%)	652 (22.8%)

*Index date varies for each individual patient

Clinical Outcomes among SARS-CoV-2-Positive Veterans



COVID-19 Vaccinations Received under Emergency Use Authorization among SARS-CoV-2-Positive Veterans*



*Patients with VA record of vaccination from 12/11/20–04/27/21.

References and Resources

1. Luo J, et al. COVID-19 in patients with lung cancer. *Ann Oncol.* 2020;31(10):1386-1396.
2. Addeo A, et al. COVID-19 and lung cancer: risks, mechanisms and treatment interactions. *J Immunother Cancer.* 2020; 8(1):e000892.
3. VA COVID-19 Shared Data Resource. https://cipherviki.va.gov/phenotype/index.php?title=COVID-19:Shared_Data_Resource (link internal to VA)
4. CSPEAR lung cancer phenotype. https://phenomics.va.ornl.gov/web/cipher/phenotype-viewer?uqid=2d48cf0da6e74d4aa42c10be3b08673b&name=Lung_Cancer_CSPEAR

Visit <https://www.research.va.gov/va-research-covid-19.cfm> for information about VA research on COVID-19.

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Limitations & Interpretation

- Data do not capture testing, treatment, vaccinations, and diagnoses received outside VA.
- About two-thirds of the Veteran lung cancer patients did not have histology and stage data in the VA oncology raw database, due to a lag in reporting by the VA Cancer Registry to the VA oncology raw database.
- No conclusions can be drawn on the differences in COVID-19 risk factors and outcomes between patients with and without lung cancer based on these data alone.