

Letter to the Editor

The COVID-19 & Cancer Consortium (CCC19) and Opportunities for Radiation Oncology



Sachin R. Jhawar, MD, MSCI,^{a,1,*} Joshua D. Palmer, MD,^{a,1} Shang-Jui Wang, MD,^a Danielle Bitterman, MD,^b Brett Klamer, PhD,^c Minh Huynh-Le, MD,^d Caroline Chung, MD, MSc, FRCPC, CIP,^e Nitin Ohri, MD,^f Daniel G. Stover, MD,^g Maryam B. Lustberg, MD, MPH,^g Sanjay Mishra, PhD,^h Jeremy Warner, MD, MS,^h Salma Jabbour, MD,ⁱ and Sharad Goyal, MD^d on behalf of the CCC19 Radiation Oncology Group

^aDepartment of Radiation Oncology, The James Cancer Hospital at the Ohio State University Wexner Medical Center, Columbus, Ohio; ^bDepartment of Radiation Oncology, Dana-Farber Cancer Institute, Brigham and Women's Hospital, Boston, Massachusetts; ^cDepartment of Biostatistics, The James Cancer Hospital at the Ohio State University Wexner Medical Center, Columbus, Ohio; ^dDepartment of Radiation Oncology, George Washington University School of Medicine and Health Sciences, Washington, DC; ^eDepartment of Radiation Oncology, The University of Texas MD Anderson Cancer Center, Houston, Texas; ^fDepartment of Radiation Oncology, Montefiore Medical Center and Albert Einstein College of Medicine, Bronx, New York; ^gDivision of Medical Oncology, Department of Medicine, The Ohio State University, Columbus, Ohio; ^hVanderbilt-Ingram Cancer Center at Vanderbilt University Medical Center, Nashville, Tennessee; and ⁱDepartment of Radiation Oncology, Rutgers Cancer Institute of New Jersey, New Brunswick, New Jersey

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To the Editor:

To date, there are more than 38,000,000 confirmed cases of coronavirus disease 2019 (COVID-19) worldwide, with over 1,000,000 deaths.¹ In the United States, there have been over 14,100,000 confirmed cases, with over 276,000 deaths.¹ This disease is highly infectious, especially because asymptomatic and symptomatic individuals can transmit the virus.^{2,3} During the pandemic, extensive public health measures have been taken to limit exposure of both staff and patients to the severe acute respiratory syndrome coronavirus-2, including physical distancing and quarantine. Due to these public health measures, there is concern that access to radiation

treatment may be limited, or treatment plans may be interrupted or changed due to severe acute respiratory syndrome coronavirus-2 infection. Despite the lack of data, multiple clinical practice guidelines have been released recommending changes in dose fractionation schedules for patients undergoing radiation therapy during the pandemic.⁴ The short- and long-term clinical effects of these changes on patient outcomes are unknown.

The COVID-19 & Cancer Consortium (CCC19) is an international collection of 120 institutions from the United States, European Union, Argentina, Canada, Mexico, and the United Kingdom. The purpose of the CCC19 is to collect detailed information on patients with cancer diagnosed with COVID-19 at scale across the globe. In the CCC19 cohort study, the 30-day all-cause mortality was 13% among 928 patients in the United States with active cancer or previous history of cancer and confirmed COVID-19.⁵ Independent factors associated with increased 30-day mortality were increased age, male

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* Corresponding author: Sachin R. Jhawar, MD, MSCI; E-mail: Sachin.Jhawar@osumc.edu.

¹ S.R.J. and J.D.P. contributed equally to the published work

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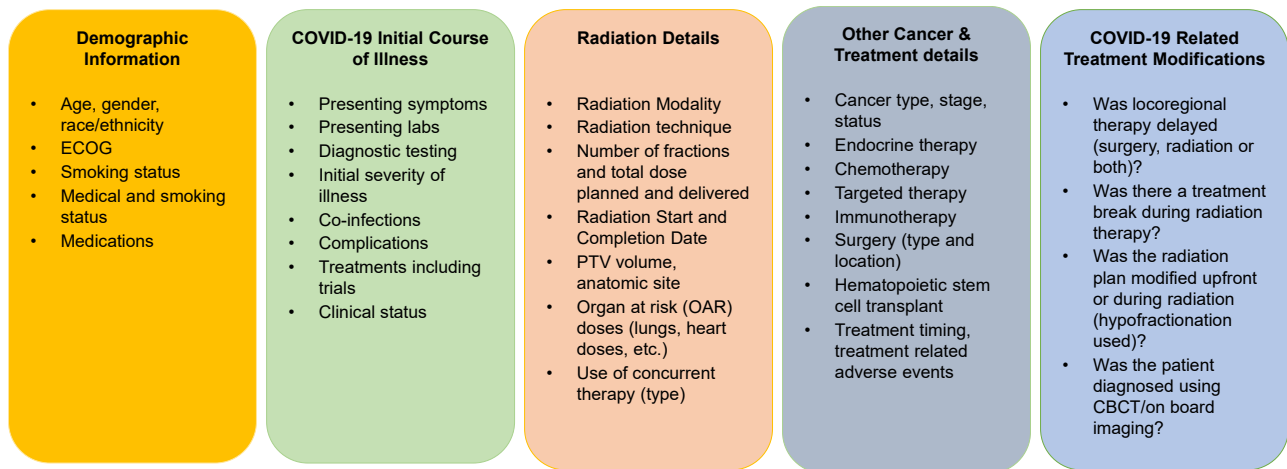


Figure 1 Patient level demographic, coronavirus disease 2019 (COVID-19) course, and cancer-related data available in the COVID-19 & Cancer Consortium (CCC19) database, along with proposed radiation-specific data variables.

sex, smoking history, number of comorbidities, Eastern Cooperative Oncology Group performance status of 2 or higher, active cancer, receipt of azithromycin plus hydroxychloroquine, and residence in the Northeastern United States. Of note, active anticancer therapy was not associated with increased 30-day mortality.⁵

In the UK Coronavirus Cancer Monitoring Project study consisting of 800 patients with cancer and symptomatic COVID-19, the risk of death was significantly associated with advanced age, male sex, and comorbidities. After adjusting for age, gender, and comorbidities, chemotherapy in the past 4 weeks had no significant effect on mortality from COVID-19.⁶ Several other studies have similarly shown no statistically significant relationship between the use of chemotherapy and adverse outcomes.^{7,8}

Specific to radiation therapy, in 59 patients with breast cancer with positive viral RNA testing or typical radiology signs for COVID-19 who were actively treated for early or metastatic disease during the last 4 months at the Institut Curie Parisian, no association was found between prior radiation therapy (RT) fields or RT sequelae and the extent of COVID-19 lung lesions. The 4 patients who died had significant noncancer comorbidities, and in univariate analysis, hypertension and age > 70 years were 2 factors associated with a higher risk of intensive care unit admission and/or death.⁸

In Wuhan, China, the largest radiation therapy data set reported to-date provided insight into the radiation treatment courses of 209 patients⁹ with a 10-fold decrease in clinical caseload due to the lock down. Beyond these reports, there have been no large studies addressing the effect of COVID-19 related delays to start RT, changes in radiation treatment dose and fractionations, or unexpected interruptions or delays in completing treatment, which

could have long-lasting effects on overall cancer outcomes.

The CCC19 have an exceptionally detailed system of data collection on cancer-related variables for over 6000 patients (Fig 1). Currently, the consortium lacks important details of radiation treatment and timing. We aim to increase the collection and availability of radiation-specific variables to allow a more granular analysis of radiation decision making and the effect of radiation treatment during the COVID-19 era. We hope to call attention to the members of the American Society for Radiation Oncology to join the CCC19 and help accrue additional patients with radiation-specific details. The CCC19 will help to better understand the use of radiation treatment during the COVID-19 pandemic, the effect on cancer and COVID-19 outcomes in general, and help prepare our field for any future pandemic.

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