

Brief Opinion

The International Response to the Coronavirus Disease (2019) COVID-19 Pandemic in Radiation Oncology

Edina Wang, MD,^a Chiaojung Jillian Tsai, MD, PhD,^b and Robert C. Miller, MD, MBA, FASTRO^{c,*}

^aDepartment of Radiation Oncology, Georgetown University, Washington, DC; ^bDepartment of Radiation Oncology, Memorial Sloan Kettering Cancer Center, New York, New York; ^cDepartment of Radiation Oncology, University of Maryland School of Medicine, Baltimore, Maryland

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In March of 2020, as it became apparent that the coronavirus disease 2019 (COVID-19) pandemic would affect radiation oncology clinic operations globally, health care professionals in the United States and elsewhere began to search for information to help prepare their clinics for safe operations. In response, the international radiation oncology community shared experiences and best practices with unprecedented speed. [Figure 1](#) shows the increase in manuscript volume published in the American Society for Radiation Oncology's *Advances in Radiation Oncology* during this time versus the prior year. The articles included in this special issue are part of this response and cover diverse topics pertinent to the practice of radiation oncology around the world. Initially, the submitted manuscripts focused on topics ranging from enhancing patient and staff safety to determining optimal cancer treatment strategies. Over time, the focus shifted to the detection of COVID-19 with the imaging performed in radiation oncology and to potential radiation-related risk factors in COVID-19 morbidity. Overall, these articles have offered perspectives and guidance on novel challenges in the practice of radiation oncology, and their topics continue to evolve at the time this manuscript goes

to press. They will also serve as a permanent written history of the challenges faced by our profession as the pandemic progressed.

Initially, radiation oncologists in global COVID-19 hot spots began describing the procedures and policies they were implementing to help protect their patients and staff in response to the spread of the virus. Early manuscripts from European and Asian institutions described their experiences creating a patient triage workflow, facility decontamination protocols, and the critical importance of personal protective equipment. They also described the measures employed to limit the impact of the virus on clinic operations. These measures and policies provided guidance for other radiation oncology clinics as they dealt with the pandemic. The example provided by Krengli et al has received 24 citations in PubMed less than 3 months after publication.¹

With changes in clinic operations and the recognition of resource constraints, attention then turned to determining the optimal management of cancer during the pandemic. Early published reports suggested that patients with cancer could be at an increased risk of infection and complications from COVID-19 compared with patients without cancer.² Consequently, the international radiation oncology community considered methods to balance the benefits of cancer treatment with the risks of COVID-19 exposure and infection.

Subsequently, public interest was soon focused on evidence-based approaches to altering treatment fractionation and ways to safely delay therapy to reduce

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* Corresponding author: Robert C. Miller, MD, MBA, FASTRO; E-mail: robertmiller@umm.edu

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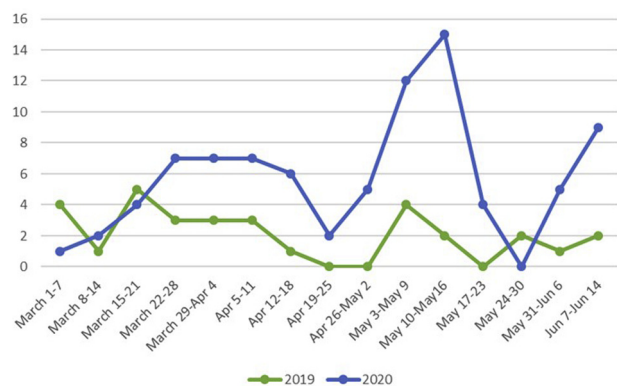


Figure 1 The number of manuscripts published in the American Society for Radiation Oncology's *Advances in Radiation Oncology* per week from the first week of March to the last week of May, 2019 versus 2020.

patient density in radiation oncology clinics. For example, Braunstein et al discussed approaches to defer or shorten breast cancer radiation therapy.³ Wu et al discussed their considerations for thoracic radiation therapy, including adopting maximal evidence-based hypofractionation.⁴ Romesser et al discussed a paradigm change at their institution from total neoadjuvant therapy with a preference for long-course chemoradiation to short-course radiation therapy for locally advanced rectal cancer.⁵

As the situation around the world continued to evolve, joint papers from the American Society of Radiation Oncology, the European Society for Radiotherapy and Oncology, and other ad hoc multi-institutional groups provided recommendations for common disease sites in *Advances*, *The Red Journal*, and *Radiotherapy and Oncology*. Included in this issue, Zaorsky et al give recommendations to avoid, reduce, or delay radiation therapy treatment for different clinical scenarios in prostate cancer.⁶ As the COVID-19 situation continues to develop, we will likely see ongoing evaluations and changes in recommendations for various cancer treatment strategies.

There has also been recent interest in detecting radiographic signs of SARS-CoV-2 infection on imaging that is performed as a part of radiation therapy planning and delivery, including cone beam computed tomography and computed tomography simulation. In this special *Advances* edition, multiple case reports and case series describe how clinicians can detect radiographic changes that may help screen for and identify COVID-19, potential confounders on imaging, and subsequent management considerations after suspicion of SARS-CoV-2 infection.⁷

Finally, there have been studies on radiation therapy-related risk factors to consider in a patient with COVID-19. A manuscript by Grellier et al discusses the association of regional lymph node irradiation with lung damage in patients that are COVID-19 positive.⁸ Kabarriti et al also consider the association of prior lung radiation extent with mortality in patients with COVID-19 and cancer history in a New York practice.⁹

We express our gratitude to the international community of contributors who have shared their experiences and perspectives.

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