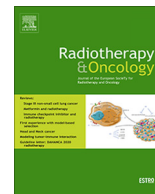




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COVID-19 Rapid Letter

Management of gynecologic cancer: Choosing radiotherapy wisely by 3 Southern Ontario academic centers during the COVID-19 pandemic [☆]



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Dear Editor:

The COVID-19 pandemic has dramatically impacted surgical capacity, radiotherapy and chemotherapy delivery worldwide. Contributing factors include the importance of social distancing to reduce viral transmission, the recognition that cancer patients have a higher risk of severe events compared to non-cancer patients [1], and resource limitations of the cancer centre with limited personal protective equipment (PPE), staffing shortages due to illness and redeployment. Recommendations have been made by national bodies and individual institutions to defer adjuvant RT, and to hypofractionate adjuvant and definitive treatment where appropriate [2–4].

Radiotherapy has an important and established role in the primary and adjuvant management of gynecologic cancers. It is the definitive treatment modality for locally advanced cervical, vaginal, and vulvar cancers. Adjuvant radiotherapy may be recommended for endometrial, cervical, vaginal and vulvar cancers. While the volume of patients referred for adjuvant radiotherapy may have decreased during the pandemic with reduction in operation room hours, there conversely may be an increased demand for radiotherapy for cancers traditionally managed with upfront surgery, or progressed during the pandemic.

We would like to share our approaches earlier on during the pandemic with the broader community. As radiation oncologists specializing in gynecological cancer management at three large academic cancer centers in Southern Ontario, Canada, we

participated in separate multi-disciplinary (with gynecologic and/or medical oncologists) at our institutions and cross-institutional meetings with each other between March – early April 2020 for COVID-19 pandemic planning. The radiation oncology group searched the literature on hypofractionated, abbreviated and alternative radiotherapy regimens, as well as impact on the delay of radiation treatment using National Library of Medicine (PubMed/MEDLINE). We established potential strategies based on the existing literature, prioritizing prospective data and randomized controlled trial where available (Supplementary material). Where multiple modalities are employed, the relative and/or incremental benefit of each modality was considered. We employed evidence-based strategies where possible for radiation treatment of gynecologic cancers during the COVID-19 pandemic, with a view towards treatment deferral and/or reduced number of fractions whenever feasible and appropriate. In general, we prioritized newly diagnosed or isolated loco(regional) recurrent, curable gynecological cancer where radiotherapy is the primary curative modality, such as locally advanced cervical, vaginal and vulvar cancer, and isolated vaginal recurrence of endometrial cancer. Every effort was made to minimize the overall treatment time of locally advanced cervical cancer, including the use of simultaneous integrated nodal boost and not delaying 3D image-guided brachytherapy during the pandemic. While the numbers of COVID-19 cases have been declining in several countries (including Canada), they continue to surge in others where our approaches may be of interest.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.radonc.2020.07.021>.

References

- [1] Yu J, Ouyang W, Chua MLK, Xie C. SARS-CoV-2 Transmission in Patients With Cancer at a Tertiary Care Hospital in Wuhan, China. *JAMA Oncol.* 2020;6(7):1108–10.

[☆] The Editors of the Journal, the Publisher and the European Society for Radiotherapy and Oncology (ESTRO) cannot take responsibility for the statements or opinions expressed by the authors of these articles. Practitioners and researchers must always rely on their own experience and knowledge in evaluating and using any information, methods, compounds or experiments described herein. Because of rapid advances in the medical sciences, in particular, independent verification of diagnoses and drug dosages should be made. For more information see the editorial "Radiotherapy & Oncology during the COVID-19 pandemic", Vol. 146, 2020.

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- [2] Filippi AR, Russi E, Magrini SM, Corvò R. Letter from Italy: First practical indications for radiation therapy departments during COVID-19 outbreak. *Int J Radiat Oncol Biol Phys.* 2020;107(3):597–9.
- [3] Coronavirus (COVID-19): cancer treatment documents. Royal College of Radiologists (RCR). <https://www.rcr.ac.uk/college/coronavirus-covid-19-what-rcr-doing/coronavirus-covid-19-resources/coronavirus-covid-19-1>. [accessed 6 April 2020].
- [4] Coles CE, Aristei C, Bliss J, et al. International Guidelines on Radiation Therapy for Breast Cancer During the COVID-19 Pandemic. *Clinical Oncology.* 2020;32:279–81.