The Impact of the COVID-19 Pandemic on Radiation Therapy Delivery for Pediatric Patients: Trainee Perspective and Practical Challenges

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Abstract

The COVID-19 global pandemic represents a unique challenge affecting all aspects of current life including the delivery of healthcare around the globe. Radiation treatment is an integral part in the management of many pediatric malignancies, and the aim is to provide our institutional experience and trainee perspective on the delivery of radiation treatment during this era to facilitate further discussion regarding the practical impact of the pandemic on the treatment of childhood cancers and trainee education. Overall, the effect of the virus on the population of children with malignancies and its possible impact on their overall outcome is uncertain. The impact on trainee education is inevitable but can be mitigated in the context of adequate personal safety measures and online education. The authors strongly advocate for data sharing among facilities to determine the optimal safety measures that decrease the likelihood of COVID-19 transmission yet do not compromise the delivery of radiation treatment to children.

Keywords: COVID-19-radiation treatment-radiotherapy-pediatric cancer

Introduction

The coronavirus disease 2019 (COVID-19) emerged as a new global infectious threat in December 2019 following reports of a new severe acute respiratory syndrome in the city of Wuhan in the Chinese Province of Hubei [1]. The disease turned out to be caused by SARS-CoV-2, a novel coronavirus, and its rapid spread around the globe lead the World Health Organization to declare the virus outbreak a pandemic on 3/11/2020. In the state of Ohio, the first confirmed cases of COVID19 infection were reported 3/10/2020. As of July 7th, 2020, Ohio has recorded a total of 58,904 cumulative confirmed COVID19 infection cases [2]. The governor of Ohio issued a stay at home order on 3/23/2020 which remained in effect until 5/29/2020.

Institutional Response

The Ohio State University health system swiftly responded to the pandemic by implementing several personal safety measures for providers including but not limited to: Minimal physical contact with patients unless necessary for treatment decision-making, daily temperature check upon entry to the hospital or home temperature checks that must be recorded, protective eye wear and personal surgical/procedural masks for providers during patient contact (N95 masks were not required for patient contact, but were required for procedures including nasopharyngolaryngoscopy, and no home-made masks were allowed), telehealth appointments for patients who do not require an in-person visit, strict visitor policy which stipulated that only new patients may be accompanied for a consultation by 1 other adult, children may be accompanied by 1 adult for any other visits, and adult patients presenting for follow-ups and other routine visits may not be accompanied unless they have a diminished decision-making capacity. No children that were not patients were allowed during any visits including siblings. All meetings including multidisciplinary team meetings such as tumor boards were transitioned to online forums.

All patients who were deemed to require radiation
As a trainee in radiation oncology, Dr. Mladkova was involved in seeing all new pediatric patients and all known patients who required treatment. Due to the effort to minimize the risk of exposure for patients by seeing multiple providers, Dr. Mladkova was not a part of all on-treatment visits for every single patient on treatment, but their course was always discussed with me if she was not present for their on-treatment visit. The major difference compared to the standard setup in the clinic was that routine follow-up visits took place over the phone with the attending physician. This perhaps created the biggest educational change compared to pre-COVID-19 era.

To counteract this fact, our department organizes a weekly pediatric team meeting during which both new and known cases are discussed and this provides an excellent additional opportunity for trainee education: many of the patients who had telehealth appointments were reviewed during this meeting and this provided an additional educational background to the trainee.

In conclusion, very little is known with respect to COVID-19 impact on children with cancer. It is not possible yet to say with certainty that COVID-19 had not affected the course of care for children with cancer that required radiation treatment, as changes in the referral and surveillance pattern need to be explored to determine this with adequate confidence, along with long-term follow-up data. Radiation treatment at our institution was delivered in a standard albeit modified fashion mainly impacting the character and nature of in-person visits. Technology allowed for participation of additional family members who were not allowed to be a part of clinic visits due to COVID-19 visitor policy, and for the continuation of trainee education. Further collaborative data is needed to determine the best approach with respect to treatment delivery during a pandemic.

References


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