Challenges in Pediatric Radiotherapy requiring Anesthesia during SARS-CoV-2 Pandemic

Dear Editor,

In the realm of cancer care, the ongoing SARS-CoV-2 outbreak has significantly affected health-care facilities including radiotherapy (RT) practices worldwide. Increased use of RT has been recommended as (a) it does not compete with resources needed for COVID-19 management (hospital admission/intensive care unit/ventilators) (b) can be delivered on an outpatient basis, and (c) is less immunosuppressive than chemotherapy.[1] Adaptations in RT technique and dose-fractionation have been made to reduce the machine contact time and to shorten the treatment course.

Although RT is considered as a relatively safe and easy to deliver treatment, it is not without its own unique challenges, especially in pediatric population who require daily general anesthesia (GA). The issues with pediatric RT under GA are:

1. Approximately half of the pediatric patients who harbor SARS-CoV-19 infection may be asymptomatic and testing during early period of the infection can give false-negative results[2]
2. Children will require daily anesthesia for 3–6 weeks. Transmission of SARS-CoV-2 is a major concern for anesthesiologists during aerosol-generating procedures such as bag-mask ventilation, endotracheal intubation, and suctioning.[3] The risk to pediatric anesthesiologist is even higher due to high number of asymptomatic patients and false-negative results. For these reasons, the ideal timing of SARS-CoV-2 testing in this group of patients is not clear. Testing for SARS-CoV-2 within 24–48 h before each administration of anesthesia (as in case of major surgeries) cannot be adopted as due to longer course of the treatment, each child will require multiple testing during RT, increase cost, high rates of false-negative results, increase burden in virology department, and delay in the reporting and testing of symptomatic patients. Although most of these patients need short GA and do not require endotracheal intubation, the possibility of requiring the same cannot be ruled out completely. Due to high risk of false-negative results, some authors have recommended use of personal protective equipment (PPE) before giving anesthesia even if the patient is asymptomatic and SARS-CoV-2 test is negative.[4] However, the practice will also increase the use of PPE and cost of the treatment. The use of sedation is another alternative solution in a selected group of patients
3. Machine time is higher for patients requiring GA
4. Hypofractionated RT has been routinely used for adult patients during COVID-19, however, the same cannot be implemented in children without increasing the risk of late toxicities
5. Benefit of COVID-19 vaccine is unclear.

Since the outbreak of SARS-CoV-2 pandemic, numerous recommendations have been given for patients requiring RT. However, the group of pediatric cancer patients who need daily anesthesia for RT has not received any attention. To our knowledge, this is the first paper addressing the issues in these patients. In our opinion, PPE kits should be used to administer anesthesia. Testing should be done only when the child is symptomatic or at high risk of contracting infection due to high incidence of false-negative report. Hypofractionated RT should not be used unless any specific indication.

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Conflicts of interest

There are no conflicts of interest.

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