

## Letter to the Editor

# Adapting Radiation Therapy Treatments for Patients with Breast Cancer During the COVID-19 Pandemic: Hypo-Fractionation and Accelerated Partial Breast Irradiation to Address World Health Organization Recommendations



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To the Editor:

On March 11, 2020, the World Health Organization declared the COVID-19 outbreak a global pandemic. Public health officials have urged communities to minimize transmission by changing their habits, including posttravel self-isolation, increased hygiene vigilance, remote working, and social distancing.<sup>1</sup> To accommodate these measures, radiation therapy departments are adapting by limiting on-site staff, patient visits, and patient-to-staff interactions, reconciling the goals of minimizing exposure for both patients and health care providers while maintaining quality cancer care.

During this pandemic, opportunities exist to reduce patient visits and thus potential exposure to COVID-19 and to judiciously allocate radiation therapy operation resources by implementing alternative hypofractionated regimens for select, safe treatment sites. Radiation therapy

for patients with breast cancer represents a significant proportion of treatment delivery workload in any radiation therapy department. Some centers may consider omission or deferral of radiation therapy in those patients perceived to have a lower risk of adverse outcomes, such as patients with ductal carcinoma in situ or early stage disease with low-risk features. However, with an unknown and potentially lengthy timeline for the pandemic, many patients and clinicians are not comfortable with these options. Modeling studies predict that this pandemic may take months to peak, and these heightened public health measures may remain in place for many months.<sup>1</sup> Therefore, strategies to adapt to this “new normal” are crucial to maintaining access to radiation therapy for patients with cancer. Our strategy is based on the appropriate use of hypofractionation and accelerated partial breast irradiation (APBI).

The focus on breast radiation therapy is crucial because of its significant impact on radiation therapy resources. The adoption of hypofractionation for patients, including those requiring locoregional irradiation, and the option of APBI for suitable patients based on international consensus guidelines can serve to significantly reduce the

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number of radiation therapy fractions and, as a result, minimize patient exposure during treatment and counteract increased pressure on the health care system.

Hypofractionation regimens, such as 42.5 Gy in 16 fractions or 40 Gy in 15 fractions, have demonstrated equivalent local control and cosmetic outcomes in most patients after breast conserving therapy.<sup>2</sup> Although less commonly used in postmastectomy with regional nodal irradiation, hypofractionation is comparable to standard fractionation with favorable long-term efficacy results and low overall toxicity.<sup>3</sup> More recently, 1-week 5-fraction regimens have been compared with the 40 Gy in 15 fractions whole breast radiation in the UK FAST FORWARD trial for treatment of early stage disease, with favorable acute toxicity.<sup>4</sup> We are now awaiting the local control and survival data outcomes from this trial. Compared with the conventional 5-week fractionation of 50 Gy in 25 fractions, these shortened courses save patients between 9 and 20 visits to the cancer center.

The evidence supporting APBI for early stage breast cancer is also maturing. In 2019, 2 separate phase 3 randomized control trials—RAPID and NSABP B39/Radiation Therapy Oncology Group (RTOG) 0413—reported on the efficacy of APBI fractionation regimens compared with whole breast irradiation.<sup>5,6</sup> The results are favorable, showing no statistical difference in overall survival and comparable local control for patients treated in the APBI arm. The evidence supporting APBI agrees with the American Society of Radiation Oncology<sup>7</sup> patient selection guidelines. Many centers have adopted the use of APBI in a limited capacity, primarily for patients on clinical trials. Publications describing APBI techniques that meet major trial constraints with simple 3-dimensional conformal techniques, and more recently advanced techniques for improved dosimetry, are available to support radiation planning.<sup>8</sup> Implementing an APBI fractionation of 27 Gy in 5 fractions can save a further 10, 11, or 20 treatment visits for select patients.

In our tertiary care facility, the majority of patients with breast cancer (all stages; intact breast and post-mastectomy locoregional) receive the standard 3-week regimen of 42.5 Gy in 16 fractions. In consideration of COVID-19 and after a multidisciplinary review, our center is now offering a 5-fraction APBI option for eligible patients.<sup>9</sup> A review of the last 3 months of patient treatment data was performed at our institution to determine the impact of this change on radiation therapy resources. Across all tumor sites, 770 total patients were treated; of these, patients with breast cancer represented 30% of all delivered fractions. For our patient population, approximately 40% of patients with breast cancer are suitable candidates for APBI. Over a 3-month span, a 5-fraction regimen of APBI for these eligible patients with breast cancer could reduce the number of daily treatment

visits by approximately 500 and 900 for 16- and 25-fraction regimens, respectively. Across all radiation therapy resources, this overall reduction is approximately 5% to 10% of total daily fractions.

Flattening the COVID-19 curve may necessitate careful adoption of measures that decrease interaction within radiation therapy departments and minimize treatment interruptions, without compromising cancer outcomes. At a time when health care systems aim to minimize stress on the system's resources, radiation therapy can do its part to adapt. As noted by Achard et al,<sup>10</sup> the use of practical measures to ensure the treatment of patients undergoing radiation therapy must balance pragmatism and safety. The use of hypofractionated regimens and APBI may be the treatment option that best fits the balance of patient and staff safety while maintaining access to quality cancer care during the pandemic.

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