Single-Dose Radiation Therapy Addresses Breast Cancer Care Disparity

BY KELLY JONG

In the United States, Black women are diagnosed with breast cancer at a lower rate and at more advanced stages, receive post-surgical radiation therapy less frequently, report greater breast cancer-related financial impact, and suffer higher overall mortality. A study in Cancer found that nearly one-third of all Black women with breast cancer have a prolonged treatment duration compared to one-fifth of White women who face the same challenge (2020; https://doi.org/10.1002/cncr.33121).

In addition, Black women disproportionately experience barriers such as limited access to childcare and impediments to travel that negatively impact treatment compliance. To combat the disparity of breast cancer treatment, the TARGIT Collaborative Group (TCG), a national cancer advocacy organization of doctors and scientists working to improve cancer care, announced a single-dose radiation therapy that could revolutionize breast cancer treatment for Black women across the country.

Battling Treatment Barriers

"Challenges that Black women and women with lower socioeconomic status face related to cancer care are well-documented," stated Dennis Holmes, MD, FACS, former President and founding board member of the TARGIT Collaborative Group. Many aspects of traditional cancer care place a considerable burden on patients, such as traveling to an inconvenient radiotherapy site on a daily basis over the course of several weeks.

"That burden to complete care is more difficult for women who lack access to transportation, childcare, or for those who have jobs that are less accommodating," Holmes said. "These are challenges that many African-American women face that patients with better resources simply don’t.

Holmes noted that these issues of access, including a delay in the initiation of care and a delay in the completion of care, can translate to diminished survival. For every 30-day delay of receiving surgery, patients face a 10 percent decline in overall survival, and with a 60-day delay, there is a 26 percent reduction in survival of breast cancer. This can be especially severe for African-American women, who have a higher proportion of more aggressive breast cancer.

"Those barriers to initiating care are a bigger challenge for the subset of women with more aggressive cancers, because those cancers have a greater chance to grow and spread while awaiting treatment," he explained. "Time matters.

TARGIT Therapy

For women experiencing Stage I or II breast cancer, the traditional approach to treatment is tumor removal surgery followed by 3-6 weeks of daily external beam radiation therapy (EBRT), Missing multiple treatments, having a break in treatment, or not completing the full treatment course can result in higher incidence of breast cancer recurrence and decreased long-term survival. For Black women facing the additional challenges that impede successful treatment compliance, those risks are even higher.

To combat these challenges, TCG recommended TARGIT intraoperative radiation therapy (TARGIT-IORT), a single dose of targeted radiation delivered from inside the breast during surgery immediately following the removal of the tumor while the patient remains asleep.

"TARGIT-IORT is not a niche treatment," Holmes said. "It is applicable to the majority of women diagnosed with breast cancer utilizing screening or imaging, including those who are 45 years of age and older, people with a single tumor, and those who are in Stage I or early Stage II.

TARGIT-IORT is administered in the interior of the breast surgical margins at the time of surgery in a single dose, unlike traditional radiotherapy that is delivered externally post-surgery and has to pass through the skin to reach the breast tissue.

"Skin toxicity limits how much radiotherapy can be given in a single dose, so traditional therapy has to be done in small increments to reduce toxicity," Holmes explained. "With TARGIT, we eliminate skin from the path of radiation, consolidate the treatment into a single dose, and reduce the need for repeated doses after surgery."

This approach greatly reduces the burden of care by reducing repeated radiotherapy treatments over several weeks into a single event.

"Women traveling from anywhere can come for surgery and at the same time receive radiotherapy, limiting the challenges of travel or childcare to 1 day," Holmes said. "It makes breast cancer treatment more convenient for all patients, but especially those with barriers to care, by improving compliance, removing inefficiency, and improving the overall outcome."

Trial Success

A 20-year TARGIT-A international clinical trial compared TARGIT-IORT to EBRT, and long-term data consistently demonstrated no difference in local and distant breast cancer control, breast preservation, or breast cancer mortality, TGC reported. For 8 out of 10 patients, no further radiotherapy was needed, possibly eliminating the potentially fatal risks posed by EBRT noncompliance, according to the group. "We know from these randomized controlled trials that the primary endpoint is the same between TARGIT-IORT and EBRT treatments," Holmes said. "There is no significant difference between the local recurrence rate at 5 years or for overall survival at 12 years."

The most surprising piece of data to come out of the trial? There was a reduction in non-breast cancer related deaths, such as cardiovascular events or lung cancer, in patients receiving TARGIT therapy.

"Ultimately, the study showed that TARGIT is equally safe for controlling breast cancer recurrence and reducing overall mortality," Holmes said. "If you were to combine all considerations, you would conclude that TARGIT has a leg up over traditional treatment therapies."

Of course, the trial data and success of TARGIT-IORT is just one step in providing equal, quality care to Black women around the nation. Holmes said that of near equal importance is the promotion of access to universal health care.

"That is a fundamental requirement to gaining access to treatment," he said. "If you don’t have insurance, the method of treatment is a moot point."

Holmes also urged the oncology community to promote access to patient navigation, which would allow patients to easily and efficiently access information about therapies relevant to their diagnoses. "The oncology community needs to advocate for the application of a standard treatment guideline for all women," he said. "Not every patient is the same, and they don’t have to be treated the same way, but standardized guidelines that define the optimal treatment to achieve best outcomes would mean we get the right treatments in an appropriate time frame with appropriate access that reduce burden."

Holmes urged physicians to look at patients’ specific barriers to health care, such as fear of treatment, limited access to childcare, or traveling constraints. "With greater access to care comes greater compliance, and our goal is to make sure women across the country, regardless of demographic group, have access to therapy such as TARGIT-IORT that will greatly reduce the burden of care and treatment."