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Short Term Pre-Operative Endocrine Therapy Helps Clarify Patient Tolerance to Guide Post-Operative Treatment Decisions

Informs Radiation Decision-Making for Older Women with Early-Stage Breast Cancer

Abstract: 90 days of Pre-Operative Endocrine Therapy Informs Patient and Physician Preference for Radiation Therapy: Primary Results from the Pre-Operative Window of Endocrine Therapy to Inform Radiation Therapy Decisions (POWER) Trial

Las Vegas, NV, May 1, 2025—A 90-day course of pre-operative endocrine therapy (ET) provides insight into a patient's tolerance for these drugs and helps inform a decision between post-surgical radiation therapy (RT) and ET for women age 65 and older with hormone receptor-positive invasive breast cancer. These were the results of a new study presented this week at the American Society of Breast Surgeons Annual Meeting.

“For older women with this cancer profile, long-term data from large clinical trials support omission of RT after lumpectomy when patients take a five to 10-year course of post-operative ET,” notes Shayna Showalter, MD, study lead investigator and Professor of Surgery at the University of Virginia. “However, because ET side effects cause some women to discontinue the drugs without completing the full course, today most women are also treated with RT.”

Now, the phase II, multi-center POWER Trial finds that a short course of pre-operative ET allows women to assess their tolerance for the therapy and significantly alters patient preference and physician recommendations for post-operative treatment. “Those who tolerate ET well during the pre-operative period can forgo RT and choose drug therapy with greater assurance in their ability to complete their post-operative ET regime,” says Dr. Showalter. Without RT, she points out, patients who do not take the full course of ET are undertreated for their disease.

“Conversely, women who experience significant negative reactions to pre-operative ET can choose RT with greater confidence that this is most appropriate for them,” she says. “They do not necessarily need both post-operative therapies, which would represent over-treatment.”

“The goal,” she says, “is to optimize treatment for individual patients.”

The final POWER Trial cohort involved 74 women age 65 and older with early-stage, hormone receptor-positive breast cancer who chose breast conserving surgery. For pre-operative ET, patients received either aromatase inhibitors (85.3%) or tamoxifen (14.6%). Prior to and following this initial treatment, patients and their doctors completed surveys regarding their preference for adjuvant RT. After the pre-operative ET period, 21 patients (28%) and 18 surgeons (24%) changed their preference for RT, which was statistically significant.

Despite this change, most patients expressed confidence in their adjuvant therapy choice in both pre- and post-therapy surveys, suggesting that the initial course of ET provided valuable information to improve decision-making.

Of the 45 patients (60%) who initially reported a significant resistance to RT, 11 later expressed a likelihood of pursuing it. “Presumably, these women experienced side effects during the pre-operative endocrine period that were sufficient enough to persuade them to consider RT,” Dr. Showalter comments.

Of the 30 women who initially expressed a preference for RT, 10 indicated in follow-up surveys that they were now unlikely to choose radiation. “Probably these women came to view ET more favorably because they did not experience the anticipated negative reactions,” she says.

Dr. Showalter notes that the study findings validate pre-surgical ET as an effective method to drive more informed patient and physician decision-making about adjuvant therapies. “The POWER II trial, now underway, explores whether the short course of pre-operative ET will lead to less over- and under-treatment in adjuvant treatment in this population,” she says.

“Today, as cancer care becomes more patient-focused and individualized, these studies are important,” Dr. Showalter notes. “They may bring about a paradigm shift in treatment of older women with early-stage breast cancer by supplying important information for enhanced therapy planning.”

90 days of Pre-Operative Endocrine Therapy Informs Patient and Physician Preference for Radiation Therapy: Primary results from the Pre-Operative Window of Endocrine Therapy to Inform Radiation Therapy Decisions (POWER) Trial

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Background/Objective

Clinical trial data support the omission of radiation therapy (RT) when adjuvant endocrine therapy (AET) is planned for women ≥ 65 years with estrogen receptor-positive (ER+) early-stage invasive breast cancer (IBC) treated with breast conserving surgery (BCS). Due to lack of insight regarding AET tolerance, the majority of older women still receive RT. The POWER trial is a phase II multicenter trial designed to determine if 90 days of pre-operative endocrine therapy (pre-ET) changes patient and/or surgeon preferences for RT. The intentional resequencing of treatments allows patients to assess tolerance to endocrine therapy (ET) before making a decision about RT.

Methods

Between 2020 and 2024, two centers enrolled 79 women aged ≥ 65 years with IBC measuring ≤ 2 cm, clinically NO, ER+/PR \pm /HER2-. Those with a history of ipsilateral breast RT or prior use of ET were excluded. Participants took 90 days of pre-ET before BCS. Patients' and surgeons' preferences for RT, and patient decisional conflict regarding adjuvant treatments were evaluated before and after pre-ET. After BCS, adjuvant treatment plans were made by the patient and treating physicians. For each cohort, a change in preference was tested from an assumed low change rate of 5% to a rate of $\geq 15\%$ with a one-sided 5% level binomial test.

Results

The final cohort included 75 women with a median age of 73 (4 did not complete the RT preference survey). Ninety-five percent completed pre-ET (85.3%- aromatase inhibitor, 14.6%- tamoxifen). Adverse events attributed to pre-ET occurred in 35 participants (47%), with fatigue, hot flashes, and arthralgias being the most common. Patients reported a low level of decisional conflict, with no significant change between the two-time points. After pre-ET, 21 (28.0%) patients and 18 (24.0%) surgeons changed their preference for RT, which exceeded the predetermined thresholds to constitute a significant change ($p < 0.001$ and $p = 0.015$, respectively). Before pre-ET, 45 patients (60%) reported they were 'unlikely/very unlikely' to pursue RT; after pre-ET, 11 of these 45 participants reported they were 'likely/very likely' to pursue RT. Conversely, among the 30 participants who initially reported being 'likely/very likely' to undergo RT, 10 switched to 'unlikely/very unlikely.' After pre-ET, most of the time (74.7%) surgeons' recommendation for RT was 'weak/very weak'. Agreement between patients' and surgeons' preferences

for RT increased significantly from 53.3% (Kappa=-0.03) to 81.3% after pre-ET (Kappa=0.6, $p < 0.001$). Thirty-one patients (41.3%) received RT.

Conclusions

Pre-ET significantly changed patient and surgeon preferences for RT and increased the agreement between patients' preferences and surgeons' recommendations. These findings validate pre-ET as an innovative method to inform adjuvant therapy decisions and recommendations by providing patients with the experience of taking ET prior to committing to adjuvant therapy. The forthcoming POWER II trial is designed to determine the impact of pre-ET on over- and under-treatment. The POWER trials have the potential to create a paradigm shift in the treatment of older women with early-stage ER+ breast cancer.

Figure 1: Patient and Physician Preference for Radiation Therapy Before and After Pre-ET

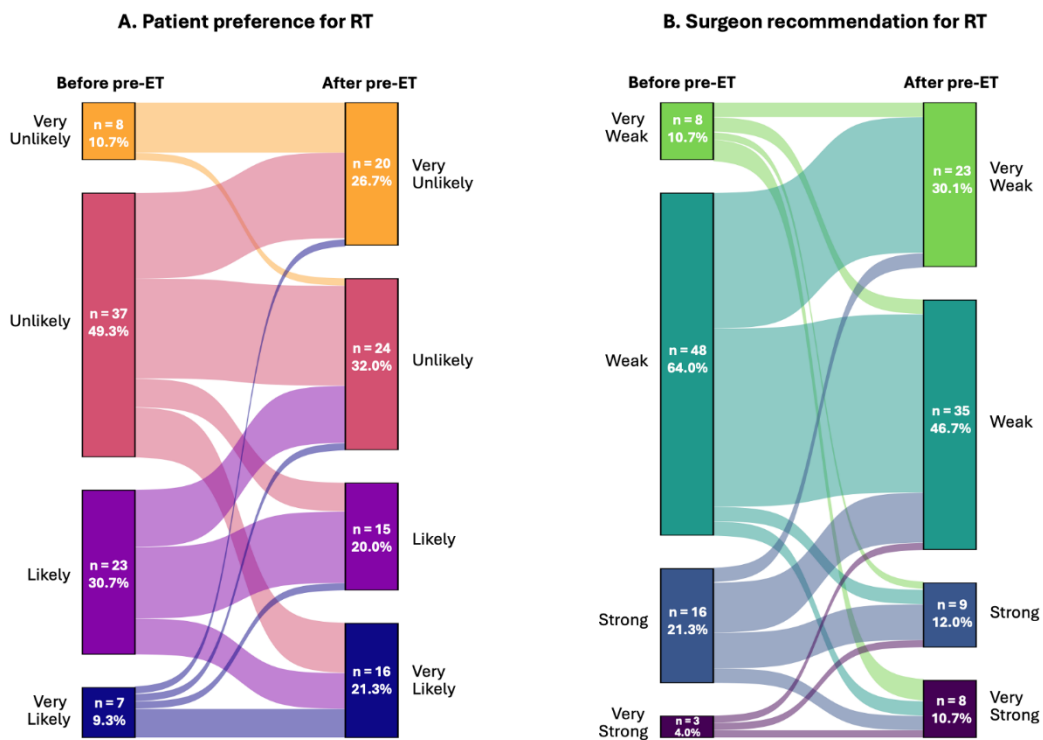


Figure. Sankey plot of (A) patient preferences for RT and (B) strength of surgeon recommendation for RT, before and after pre-ET. The size of each ribbon is proportional to the number of patients and surgeons moving from the before pre-ET to after pre-ET node. The height of each node represents the number of patients or surgeons reporting their preference or recommendation for RT before and after pre-ET. ET = endocrine therapy; RT = radiation therapy