ASO Author Reflections: How COVID-19 Impacted Breast Cancer Presentation and Management

Jennifer E. Tonneson, MD, FACS, and Judy C. Boughey, MD, FACS
Division of Breast and Melanoma Surgical Oncology, Department of Surgery, Mayo Clinic, Rochester, MN

PAST

Prior to the COVID-19 pandemic, the primary therapy for operable breast cancer was surgical resection first, followed by adjuvant chemotherapy, radiation therapy and endocrine therapy as indicated. Use of neoadjuvant chemotherapy was increasing particularly in patients with HER2 positive breast cancer and those with triple negative breast cancer. Use of neoadjuvant endocrine therapy for hormone receptor (HR) positive tumors which had been shown to decrease tumor size and increase breast conservation rates was frequently used in the UK, but not widely adopted in the US.

PRESENT

During the COVID-19 pandemic, temporary suspension of breast cancer screening programs, closures of operating rooms to elective procedures, and the need to triage patients according to medical acuity delayed treatment for some breast cancer patients and forced clinician to adjust their management strategies and look toward other therapeutic options. While operating rooms were closed, patients with early-stage hormone receptor positive disease were being started on neoadjuvant endocrine therapy (NET) to act as a bridge to surgery.

Comparing the patients treated at our institution pre-COVID pandemic to those during the first 6 months of the COVID-19 pandemic (March 2020–August 2020) we found that, despite potential delays in diagnosis due to suspension of breast cancer screening programs at the beginning of the pandemic, stage at diagnosis, method of cancer detection, and tumor biology did not differ between prior to and during the COVID-19 pandemic. We did, however, see a non-significant shift with increased stage II-IV disease at presentation during-COVID-19. Longer follow up may be needed to see the impact that lack of screening and resultant delays in diagnosis have on stage migration in breast cancer stage at presentation.

Professional societies recommended the use of neoadjuvant therapy whenever possible as a means of delaying surgical intervention during the pandemic. In a survey of 114 surgeons, medical and radiation oncologists across the US about practice trends at the height of the pandemic, more physicians (53%) preferred NET for HR positive breast cancer until surgery could proceed compared to pre-pandemic times when 46% used NET ‘rarely’ and 33% use NET ‘sometimes’. We similarly saw an increase in use of neoadjuvant therapy overall, which was due to a significantly increased utilization of NET (32% vs 10% pre-COVID-19). Specifically, we saw a significant increased use of NET in patients with clinical stage I HR+/HER2- disease (22% vs 7% pre-COVID-19) and non-significant increases in patients with clinical stage II and III HR+/HER2- disease. A logical follow up question is whether surgical management also changed. In the aforementioned survey, with longer duration of NET, physicians favored ALND for low volume axillary disease. At our institution we saw no significant difference in type of breast or axillary surgery between periods, though there was a non-significant increased use of breast conserving surgery in cT1 and cT2 patients receiving NET during-COVID-19.

© Society of Surgical Oncology 2021
First Received: 4 November 2021
Accepted: 4 November 2021;
Published Online: 30 November 2021

J. C. Boughey, MD, FACS
e-mail: boughey.judy@mayo.edu
FUTURE

Additional studies with longer follow up will help assess the impact that increased use of NET and delays in surgical management during the COVID-19 pandemic have had on patient management, surgical treatment, and cancer outcomes. Special attention should be paid to stage I patients receiving NET as they had not traditionally been managed in this way prior to the COVID-19 pandemic. Additional studies should also focus on the long-term impact delays in screening have on stage migration, surgical management, and cancer outcomes given the potential interruptions in multidisciplinary breast cancer care that could result from recurrent surges of COVID-19 or a different coronavirus in the future.

As new coronavirus variants emerge and recurrent surges in COVID hospitalizations continue to impact clinical care, this alternative management strategy of relying on neoadjuvant endocrine therapy to act as a bridge to surgery may continue to be intermittently necessary and is a viable option without negative impact on surgical management. It is likely that even in the absence of further pandemics, neoadjuvant endocrine therapy for HR positive, HER2 negative breast cancer will likely be more commonly utilized, as the multidisciplinary breast teams have become more comfortable with neoadjuvant endocrine therapy.

DISCLOSURE  Dr. Boughey receives research funding from Lilly for a clinical trial and is on a DSMB for Cairns Surgical.

REFERENCES

1. Murphy BL, Day CN, Hoskin TL, Habermann EB, Boughey JC. Neoadjuvant chemotherapy use in breast cancer is greatest in excellent responders: triple-Negative and HER2+ Subtypes. *Ann Surg Oncol*. 2018 Aug;25(8):2241–8.
2. Ellis MJ, Suman VJ, Hoog J, et al. Randomized phase ii neoadjuvant comparison between letrozole, anastrozole, and exemestane for postmenopausal women with estrogen receptor-rich stage 2 to 3 breast cancer: clinical and biomarker outcomes and predictive value of the baseline PAM50-based intrinsic subtype–ACOSOG Z1031. *J Clin Oncol*. 2011;29(17):2342–9.
3. Dietz JR, Moran MS, Isakoff SJ, et al. Recommendations for prioritization, treatment, and triage of breast cancer patients during the COVID-19 pandemic THE COVID-19 pandemic breast cancer consortium. *Breast Cancer Res Treat*. 2020;181(3):487–97.
4. Thompson CK, Lee MK, Baker JL, Attai DJ, DiNome ML. Taking a second look at neoadjuvant endocrine therapy for the treatment of early stage estrogen receptor positive breast cancer during the COVID-19 outbreak. *Ann Surg*. 2020 Aug;272(2):e96–7.
5. Tonneson JE, Hoskin TL, Day CN, Durgan DM, Dilaveri CA, Boughey JC. Impact of the COVID-19 pandemic on breast cancer stage at diagnosis, presentation, and patient management. *Ann Surg Oncol*. 2021. https://doi.org/10.1245/s10434-021-11088-6.
6. Society of surgical oncology, resource for management options of breast cancer during COVID-19. https://www.surgonc.org/wp-content/uploads/2020/03/Breast-Resource-during-COVID-19-3.30.2020.pdf. Accessed March 19, 2021.
7. Park KU, Gregory M, Bazan J, et al. Neoadjuvant endocrine therapy use in early stage breast cancer during the COVID-19 pandemic. *Breast Cancer Res Treat*. 2021;188(1):249–58.

Publisher’s Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.