Suggested Treatment Modifications in Multidisciplinary Breast Cancer Management in the Setting of COVID-19

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Introduction

In the context of the COVID-19 pandemic, the breast oncology faculty of medical oncologists, radiation oncologists, surgical oncologists, cancer geneticists, and pathologists of the Dana-Farber/Brigham and Women's Cancer Center (DF/BWCC) have developed modifications in the multidisciplinary management of breast cancer patients designed to:

1) assure optimal long-term clinical outcomes for patients with breast cancer;
2) minimize the risk of infection or exposure among patients and staff;
3) protect patients from treatment-related side effects, such as immunosuppression;
4) preserve vital resources within the health care system, as our hospitals are strained by the public health crisis.

The following are the suggested guidelines derived from published statements from national groups, examination of contemporary scientific literature, and clinical experience. Patients and staff should appreciate that the public health situation is highly dynamic, and that these recommendations may evolve as the pandemic persists. Finally, it is understood that certain uncommon clinical situations may arise that warrant individual decision-making with the clinical team on a case-by-case basis that may differ from this guidance. It is recognized that this document will not be applicable for all patients and does not take the place of individual decisions made by physicians and patients.
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Screening

1. Routine mammography for breast cancer survivors, in the absence of symptoms, will be delayed for 6 to 12 months. (1, 2, 4)

Surgery

1. **Surgery for stage I, ER+ breast cancer:** Surgery will be delayed for several months in favor of neoadjuvant endocrine therapy. Patients should be reassured that this strategy is considered standard in many settings and should not result in compromised outcomes. This strategy is already routinely used in patients with larger, higher clinical stage ER+ cancers to downstage the tumor and increase the likelihood of breast-conserving surgery. During the course of neoadjuvant endocrine therapy, patients should be monitored, including a physical exam, approximately every 8 weeks. An Oncotype test on the core biopsy tissue can be considered to confirm the primacy of endocrine therapy in this setting. (1, 2, 4)

2. **Surgery for other breast cancer subtypes (TNBC, HER2+) and higher-stage ER+:** The evolving public health needs of the pandemic mean that surgery may be delayed for patients and whenever appropriate neoadjuvant treatment options can be utilized. Such neoadjuvant approaches are standard for most stage II or III breast cancer patients (1, 2, 4). See additional discussion below.

3. **Surgery for DCIS:** Surgery for DCIS will be delayed. Given the fact that a small percentage of these patients may have a component of invasive disease, patients with ER+ DCIS should consider endocrine therapy during the delay, a practice known to be safe from prospective studies. The use of endocrine therapy may or may not be extended after surgery, based on discussions with individual patients. (1, 2, 4)

4. **Reconstructive surgery:** All autologous reconstructions will be put on hold because of the length of the surgical procedure, and the need for a multi-day hospitalization. Tissue expanders may still be placed at the time of mastectomy. Autologous flaps will continue to be offered to patients with locally advanced breast cancer requiring mastectomy in whom primary closure is not possible and soft tissue coverage of the chest wall is required. (1, 2, 4)

5. **Prophylactic mastectomy:** Contralateral prophylactic mastectomy will only be performed in patients with BRCA1 or 2 mutations or in those women who have mutations (PALB2) that convey similar risk who are undergoing mastectomy for a known cancer. However, postponement of prophylactic procedures will still be discussed in all settings given resource intensive needs intraoperatively and postoperatively. Bilateral prophylactic mastectomies for mutation carriers without a cancer diagnosis will be delayed. (1, 2, 4)

6. **Breast re-excisions:** Re-excisions will be delayed until after the completion of adjuvant chemotherapy (if given) whenever possible. Re-excisions will not be performed for patients with invasive disease with margins clear of invasive disease but positive for DCIS. For patients not receiving adjuvant chemotherapy, re-excisions for borderline indications generally will be delayed.
deferred, particularly in older women (60-70 years old and older) with ER+ cancers. These can be discussed in multidisciplinary evaluation with a tailored approach presented for the patient considering risks and benefits of additional surgery. (1, 2, 4)

7. Axillary evaluation:
   a. Breast-conserving surgery: Efforts will be made to avoid axillary lymph node dissection in patients undergoing lumpectomy who meet Z0011 criteria (clinically node negative). For patients undergoing lumpectomy and sentinel lymph nodes (SLN) biopsy, and found to have more than 2 positive SLNs on final pathologic evaluation, a completion axillary lymph node dissection (ALND) will only be performed if the information gained from that dissection would be essential to inform other treatment decisions. (1, 2, 4)
   
   b. Mastectomy: For patients undergoing mastectomy for clinical T1-2N0 breast cancer in whom there are no other obvious indications for post-mastectomy radiation therapy (i.e. young age, extensive LVI), intraoperative evaluation will be performed on SLNs and axillary ALND performed if positive (see below “Radiation Therapy”). (1, 2, 4)

Radiation Therapy
1. In patients with ER+ breast cancer who are receiving both radiation and chemotherapy, consideration can be given to administering radiation first if that timing facilitates patient safety by reducing the myelosuppression of chemotherapy during the height of the COVID pandemic. (1, 2, 3)

2. Post-mastectomy radiation will be deferred in situations where the indication is borderline. (1, 2, 4)

3. A shorter hypofractionation dose/schedule, including to the regional nodes, will be used whenever possible following either lumpectomy or mastectomy except following immediate reconstruction. (1, 2, 4)

4. A boost will generally be omitted in patients over age 50 with ER+ and/or HER2+ early stage disease. (1, 2, 4)

5. Following breast-conserving surgery in women older than age 60-65 years with small, grade 1-2, ER+ tumors, strong consideration will be given to the omission of standard radiation if a patient is planning to take endocrine therapy. (1, 2, 4)

6. Strong consideration will be given to omission of radiation after excision for low to intermediate grade DCIS, particularly in women over the age of 50. (1, 2, 4)
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Systemic Therapy
In general, the suggested modifications are designed to minimize in-person visits to the cancer clinic, as well as to reduce any risks of immunosuppression. Further modifications designed to reduce the number and frequency of routine testing, for example staging scans, echocardiogram, laboratory testing, should be considered.

Early Stage Disease

1. Chemotherapy will be modified whenever possible in HER2-negative disease to decrease the extent of myelosuppression. Examples include: a) administering paclitaxel (with minimization of steroid use) followed by AC to decrease bone marrow suppression during the height of the pandemic; b) administering weekly paclitaxel in place of docetaxel in patients receiving the TC regimen (though this modification does result in a greater number of visits); c) elimination of chemotherapy in situations where the survival benefits are quite small (< 2-3%) in younger women and even somewhat larger (< 5%) in women over 65; d) whenever possible, avoiding anthracyclines because of the potential cardiac complications of the COVID virus; e) using growth factor support wherever necessary to reduce myelosuppression. (1, 2, 3, 4)

2. Tumor genomic testing with the OncotypeDX assay is encouraged to avoid/reduce use of chemotherapy for almost all patients with ER+/HER2- disease, including younger patients and those with positive lymph nodes. Testing can be sent on surgical specimen or initial core biopsy. (1, 2, 3, 4)

3. In HER2+ disease, there is a role for greater use of T-DM1 based on both the ATEMPT and KRISTINE trials. In patients with stage I disease, a year of T-DM1 will be considered in lieu of the standard TH regimen. In patients with stage II/III disease, neoadjuvant T-DM1 + pertuzumab will be strongly considered as the initial neoadjuvant therapy for 6 cycles if the tumor is HER2 3+. (1, 2, 3, 4)

4. In patients with low risk HER2+ disease, shortening of the duration of adjuvant trastuzumab to less than 12 months will be considered, based on data from the PHARE and PERSEPHONE trials. (1, 2, 4)

5. In premenopausal women receiving adjuvant endocrine therapy, every-3-month LHRH agonist/Lupron will be administered instead of monthly treatment unless women have previously had ovarian function breakthrough on every 3 month suppression. For those women 40 and younger who would benefit from OFS, every-3-months Lupron plus tamoxifen will be used during the COVID pandemic because this provides effective therapy and does not require additional visits to monitor hormone levels, unless they have previously been demonstrated to be adequately suppressed on OFS with AI. (1, 2, 4)
6. In premenopausal women receiving preoperative endocrine therapy, tamoxifen and every-3-month Lupron (as appropriate based on risks and preferences) will be used to minimize need for additional visits to monitor hormone levels. (1, 2, 3, 4)

7. Doses of every-6-month adjuvant zoledronic acid can be deferred, with consideration to add later. (1,2,4)

8. In patients with HER2+ disease receive adjuvant or neoadjuvant therapy, a follow-up echocardiogram will be performed at 3-4 months and then deferred in the absence of symptoms. (1,2,4)

**Advanced Disease**

1. In the first-line treatment of ER+ metastatic disease, the use of CDK 4/6 inhibitors can be delayed until the height of the pandemic has passed or a patient moves on to a second-line regimen. (1, 2, 3, 4)

2. More generally, in the metastatic setting, efforts will be made to decrease the extent of myelosuppression from chemotherapy. Regimen intensity will be decreased, some regimens may be delayed, and in patients who are likely to derive very little benefit, the regimen may simply not be given. (1, 2, 3, 4)

3. We will increase the interval between in-person visits whenever possible, with minimization of supportive agents such as zoledronic acid and denosumab. (1, 2, 4)

4. The interval between scans will, whenever feasible, be increased. (1, 2, 4)

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