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Literature Review

Current Trends in Breast Cancer Management in the COVID-19 Era

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Abstract

The novel Corona Virus disease (COVID-19) has changed a lot of procedures, not just in the norms of society but also how we manage patients. Current data shows that COVID-19 is largely contracted by person to person transmission and people with co-morbidities such as cancer are at a higher risk of contracting the virus. Breast cancer is amongst the most common cancers in women worldwide and certain medications used for its treatment as well as the surgical interventions and hospital/out-patient visits put them more at a risk. This literature review seeks to address the current approaches in the management of breast cancer patients and to ascertain which methods will best limit their exposure as well as reduce their risk of contracting COVID-19.

Why Do We Need a Modified Approach to Management of Breast Cancer in the COVID-19 Era?

Al-Shamsi H.O., *et al* (2020) stated that in a retrospective study during the 2009 influenza A (H1N1) virus pandemic, the cancer patient population was at higher incidence of pneumonia (66%) and 30-day mortality

(18.5%) compared with the general population. A recent small case series study that evaluated SARS-CoV-2 in cancer patients found that patients with cancer had worse outcomes from SARS-CoV-2 than other individuals without cancer [1].

Some Outcomes So Far

In a study conducted by Vuagnat P., *et al,* of the 59 breast cancer patients diagnosed with COVID-19, 28 (47%) were hospitalized, while 31 (53%) returned home As of April 24, 2020, 45 (76%) of the 59 COVID-19 patients were considered to be either recovering or cured. An exploratory analysis of factors associated with either ICU admission or death in the COVID-19 population showed that among all the factors, only age > 70 years and hypertension were significantly associated with COVID-19 severity (both $p < 0.05$) [2].

How Do We Decide Who Gets Which Management Approach?

According to Citgez B., *et al* (2020) there are 3 priority groups for breast cancer patients' treatment, stated as follows:

1. A: Patients with life threatening conditions that have to be attended to urgently or might face some handicap.

2. B: Patients whose treatment should not be delayed for long but do not need urgent treatment.

3. C: Patients whose treatment can be delayed for a longer time without any negative consequences or handicap.

The American College of Surgeons (ACS) made the following phase classifications based on distribution of resources as results with COVID-19 patient burden:

1. A reduced number of COVID-19 patients with sufficient resources.

2. An increasing number of COVID-19 patients with limited hospital resources. In this case, procedures such as breast abscess incision and drainage and evacuation of hematomas need to be prioritized as well as ischemic mastectomy flap and autologous tissue flap revision.

3. High number of COVID-19 patients with insufficient hospital resources [3]

The Magee Approach

The Magee Breast Cancer Program (amongst the biggest in the United States of America) made the following recommendations:

Breast Imaging - 1. For screening and non-urgent imaging, patients should be given the option to defer to a later date. Seed placement should be booked as same day surgery to reduce the amount of hospital visits.

Similarly Dietz JR *et al* also classified breast cancer patients based on priority into 3 categories; Priority A, B and C [4].

Pathology - 1. Hospitals should maintain normal reporting timelines for biopsies

2. Surgical pathology reporting delays should be permissible for a few days longer.

3. Intra-operative frozen sections should be reported via phone call rather than an in-person pathology report.

Surgery/Surgical Consultations/Appointments - 1. New breast cancer patient appointments can be done at an in-person visit.

2. Patients booked for non-cancer consultations should be offered a virtual visit or a deferred in-person visit.

3. Mid chemotherapy visits should be virtual visits

4. End chemotherapy visits should be done as a video visit if possible

5. Post-operative visits should virtual visits unless there is need for things like drainage removal etc

6. Breast Cancer follow-up appointments can be booked as virtual visits or a deferred in-patient visit.

7. Patients with lymph-edema should be offered virtual or deferred in-patient visits.

Surgical Procedures - 1. For situations when it is risky to delay surgical intervention, patients should be offered a procedure immediately, especially: a. patients on chemotherapy with no alternative medical therapies b. Patients with HER2 positive breast cancer c. elderly/frail triple negative breast cancer patients.

2. Patients that can postpone their operation without poor outcomes should be offered conservative intervention while waiting for surgery, such as: a. Hormone receptor positive breast cancers i. Tamoxifen 20mg PO Q day if premenopausal, with reassessment of situation every 2 weeks or Anastrozole 1mg PO Q day if postmenopausal b. Pre-menopausal patients with triple negative breast cancers, ER negative or HER2 positive breast cancers with Neo-adjuvant chemotherapy c. Risk-reducing surgeries

Medical Oncology - 1. Routine follow-up visits should be done through telemedicine, e-mail or phone.

2. Infusions and monthly injections should be done as usual.

3. Metastatic breast cancer patient protocols should continue as normal.

Plastic Surgery - 1. Breast plastic surgery is generally not time dependent, therefore the results are similar even if performed several months after the originally scheduled operation.

2. Performing a delayed reconstruction several months after mastectomy produces similar outcomes to performing it immediately, with few exceptions. A delayed reconstruction after the Covid-19 crisis has abated is more favourable, unless there are extenuating factors to the contrary and this should be assessed on a case-by-case basis.

Radiation Oncology - 1. New consultations should be done via telemedicine if possible.

2. Timelines for treatment of most patients can remain the same.

3. Timelines for low risk, luminal patients can be delayed.

Genetics - 1. Urgent consultations can still be seen in person.

2. Non-urgent consultations already booked should be offered a telemedicine appointment or offered the option of rescheduling.

3. Only urgent patients should be booked.

Multidisciplinary Meetings and Conferences - should proceed as usual using video conferencing.

Further Recommendations

Braunstein L.Z., *et al* suggested that the omission of radiation therapy (RT) among those who are eligible should be prioritized [5].

Coles C.E., *et al*, further suggested to omit RT for patients over 65 years (or younger patients with co-morbidities) with invasive breast cancer of up to 30mm with clear margins, grade 1-2, estrogen receptor (ER) positive, human epidermal growth factor receptor 2 (HER2) negative and who are already billed for treatment with endocrine therapy [6].

As concerns operative decision making, Luther A., *et al* came to the conclusion that patients who have recently completed neo-adjuvant chemotherapy should be prioritised for surgical management of their breast cancer as well as pregnant patients [7].

Another major concern is the psychological toll of the COVID-19 disease and the associated anxiety on these patients. Pediconi F., *et al* after considering the significant psychological impact on oncological patients compounded by multiple factors such as: knowledge that the individual is at higher risk of serious complications if infected by SARS-CoV-2, loneliness and isolation as a result of social distancing, and the underlying constant fear of the cancer, suggested that patients' psychological well-being should be considered and should be addressed with telemedicine/phone visits. Also, to reduce the feelings of uncertainty affecting clinicians and patients, adequate psychological support is an essential tool to be adopted by healthcare workers to aid cancer patients to overcome this difficult moment [8,9].

Conclusion

In summary, measures such as limiting in-patient visits and the use of tele-medicine visits are indispensable in these times. Furthermore, the proper triage of patients based on severity and priority cannot be over-emphasized. Patients as well as health care staff should also be conscious of their psychological and mental health in these times and look out for one another. If these measures are adopted maybe with slight variations based on case or center variations, it will go a long way in both protecting our breast cancer patients from COVID-19 infections and complications and as a result reduce the illness burden.

Conflict of Interest Statement

There are no conflicts of interests.

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