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Impact of COVID-19 Pandemic on Breast Cancer Paients in a Teriary Care Center

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ABSTRACT

Background: The COVID-19 pandemic has significantly impacted the health-care system worldwide, and surgeons faced challenges in clinical practice, especially in managing cancer patients. This study aimed to assess the impact of COVID-19 on delay of breast cancer patient's management.

Methods: A cross-sectional study was conducted to study the impact of global COVID-19 pandemic and subsequent governmental directives on surgery department of M.G.M. Medical College, M.Y. Hospital, Indore (M.P.) on all breast cancer patients referred to our unit from march 2021 to July 2021. Type of treatments and surgery, TNM, tumor diameter, and predictive and prognostic factors were analysed.

Conclusions: The study's findings show that the active COVID-19 pandemic led to a more stressful situation among physicians, which has affected management of breast cancer patients. COVID-19 is reshaping the delivery of not only breast cancer care but also general oncology practice. Currently, due to the availability of effective vaccination and more understanding of COVID-19, we believe that breast cancer operations should be performed on their scheduled date.

Introduction

At the end of December 2019, an outbreak of an interstitial lung disease caused by a novel type of coronavirus (SARS-CoV-2) was first reported in the city of Wuhan, China [1]. The World Health Organization (WHO) subsequently designated it as the Coronavirus Disease 2019 (COVID-19) [2,3]. One month later, the COVID-19 outbreak was declared a pandemic [4]. The rapid global spread of the viral infections and disease led to the introduction of far-reaching containment and reduction strategies in the affected countries around the world. To provide hospital capacity, protective equipment and ventilators for an expected increasing number of COVID-19 patients, surgical disciplines in India were instructed to postpone all elective surgeries and to reallocate staff to the intensive care units and COVID-19 wards as needed [5]. Various national surgical societies and associations published statements on the guidance for triage and urgent surgical interventions that were still considered feasible or mandatory [6,7,8]. Many surgical units were massively affected by restructuring measures [9,10]. 45% of patients with early breast cancer; depending on age and tumor biology) may be recommended to receive neoadjuvant chemotherapy or adjuvant chemotherapy and the benefits are related to maintaining dose and schedule [11-16]. Neoadjuvant chemotherapy is generally recommended for the treatment of high-risk early breast cancer [17], and this approach continues to be appropriate during the pandemic [18]. Delay or interruption of neoadjuvant chemotherapy or adjuvant chemotherapy by COVID-19 infection could result in adverse outcomes including development of drug resistance and cancer progression. This Perspective addresses the impact of the pandemic on neoadjuvant chemotherapy and routine care [19-21].

The present cross-sectional study aims to evaluate the impact of the global COVID-19 pandemic and subsequent governmental directives on surgical departments. In the survey conducted, data were collected on experiences regarding the effect of the governmental restrictions, on restructuring and financial burdens for the surgical departments, as well as on the assessment of future developments. The results may be helpful for other countries in adapting containment strategies or resuming elective surgeries in order to regain high quality surgical care under the given circumstances, especially since further waves of the pandemic are expected.

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Methods

Study design

A cross sectional study was conducted to study the impact of global COVID-19 pandemic and subsequent governmental directives on surgery department of M.G.M. Medical College, M.Y. Hospital, Indore (M.P.) on all breast cancer patients referred to our unit from March 2021 to July 2021 were enrolled. Type of treatments and surgery, TNM, tumor diameter, and predictive and prognostic factors were analyzed.

Duration of study- 5 months

Sample size: All the patient whose surgeries were delayed due to COVID 19 pandemic and who underwent chemo therapy for breast carcinoma was selected.

Inclusion criteria

1. All cases of breast cancer whose diagnosis was confirmed by histopathological examination.

2. All the patients who gave written consent.

Methodology

Women older than 18 years and diagnosed with breast cancer during study period were selected for inclusion. After breast cancer diagnosis, the following data are gathered: patient characteristics (e.g., age at diagnosis, gender, socio-economic status), detection method (e.g., screening), tumor characteristics (e.g., TNM stage, morphology, grade, and hormone receptor status), and primary treatment (e.g., surgery, neoadjuvant therapy, and systemic therapy).

Results

Twenty patients were diagnosed with carcinoma of breast from March 2021 to July 2021. All patients were female, ranging from 30 to 63 years of age (mean 47.3 ± 5.45) (Figure 1). On histo-pathological examination 17 (85%) patients had invasive carcinoma, while remaining had medullary carcinoma of breast (1), neuroendocrine tumor (1) and ductal carcinoma *in situ* (1) (Figure 2). Those who presented with a benign lump were excluded from the study. No participant withdrew from the study at any time after giving consent. Majority of them i.e., 9 (45%) had grade 3 tumor, 5 had grade 2 tumor (Figure 3). All of them underwent chemotherapy.
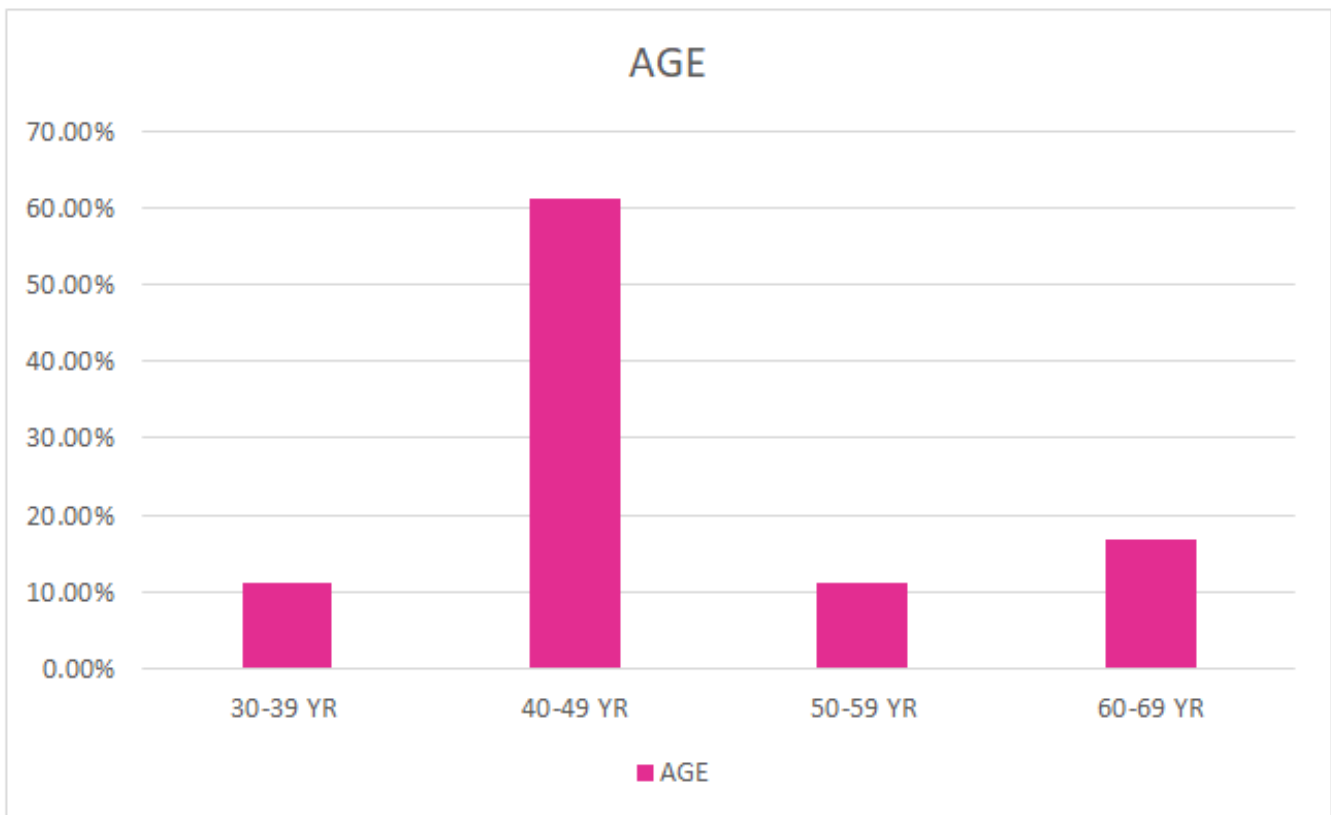

Figure 1. Patient characteristics after breast cancer diagnosis. **Note:** (█): Age
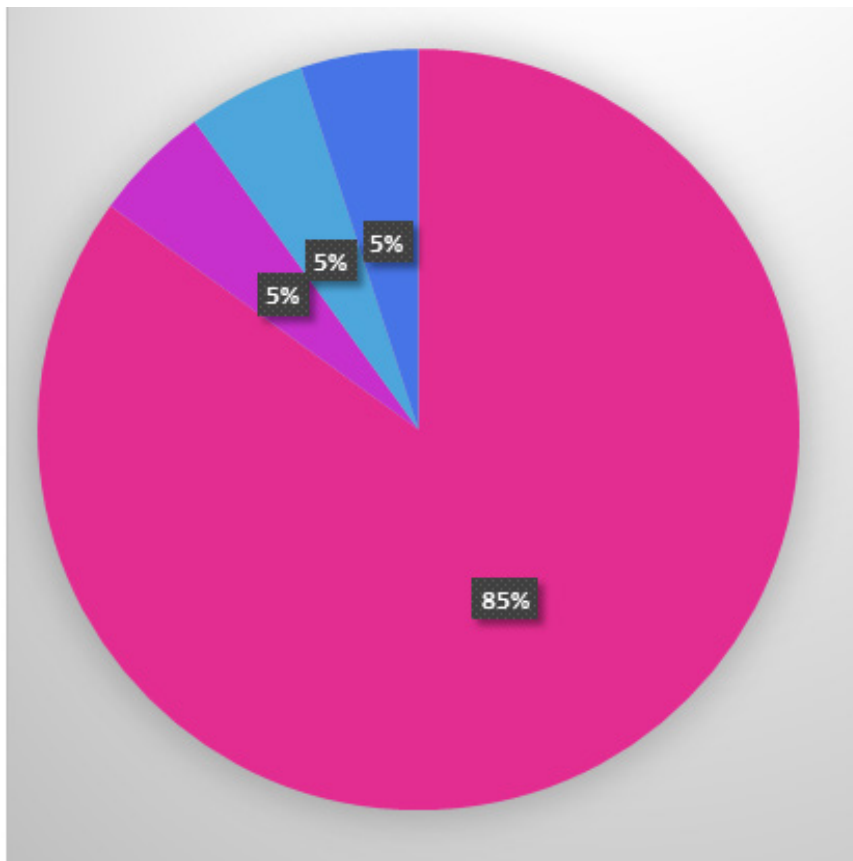
Figure 2. Graphical representation of histo-pathological examination. **Note:** (■): Invasive ductal carcinoma; (■): Medullary carcinoma; (■): Neuroendocrine tumor; (■): Ductal carcinoma *in situ*
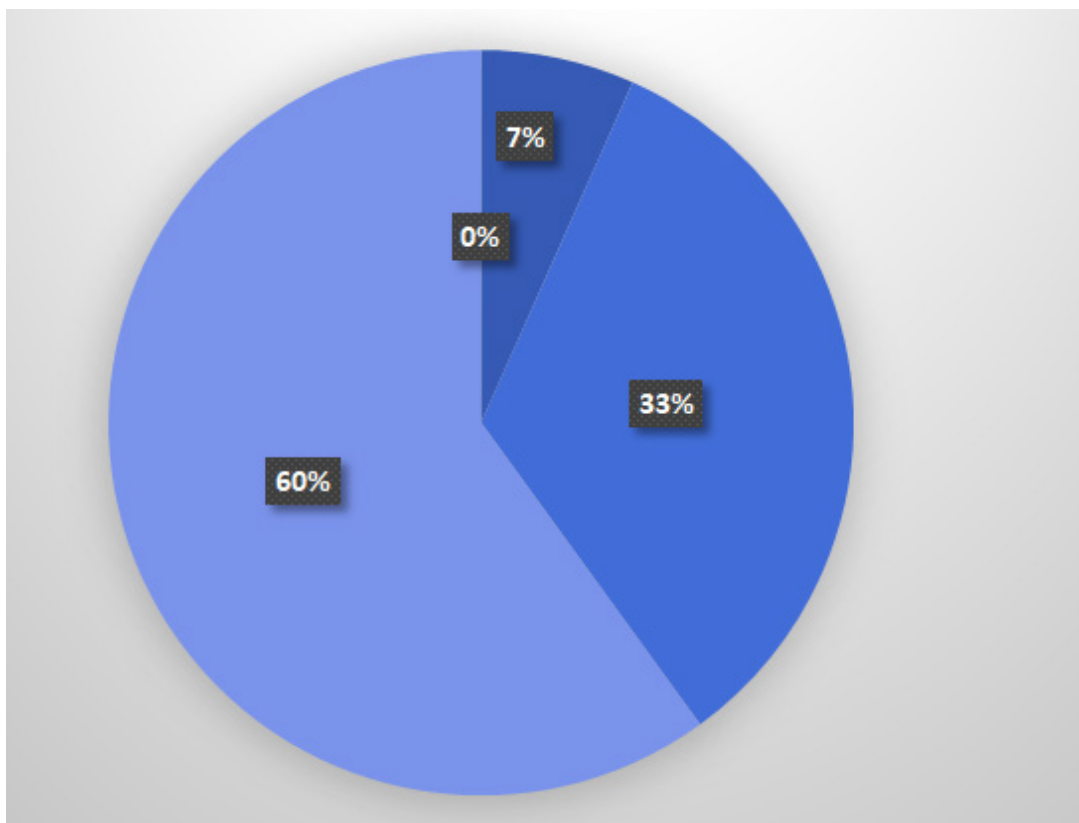

Figure 3. Graphical representation of tumor grades. **Note:** (■): Grade 1; (■): Grade 2; (■): Grade 3; (■): Grade 4.

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Discussion

The COVID-19 pandemic which started in December 2019, is not over yet and at present it cannot be predicted when this is going to end as it depends on multiple factors like infectivity of a person, the isolation measures and lockdown status of affected countries, and emerging immunity. The vaccination campaign is having an impact, albeit slowly, it will take ages for the country to achieve herd immunity.

With the reallocation of the maximum resources by the hospital to the COVID-19 patient care in critical units, resource demanding diseases like breast cancer services have faced serious setbacks. We have tried to quantify what setbacks breast cancer care has taken in our hospital due to this pandemic. We have seen in our study that these patients present extremely late to the hospital due to a myriad of known and unknown reason. On top of that sometimes they are just lost to follow up for indefinite periods even after the treatment has started. Although we tried to continue with the same treatment protocol for COVID negative and positive patients the patients with positive PCR had to be quarantined as per hospital policy in vogue, which may have contributed to upstaging of disease in some of these patients.

We determined in our study that most of the patients 60 (87%) presented with advanced (stage 2b and above) of breast cancer. This is comparable to another research in where 69.9% females reported in stage III and IV of Breast Cancer [11]. This presentation in advanced stage can be due to longer patient delays from noticing of first symptom to presenting to a health care facility as explained in a meta-analysis by Richard et al. in which a positive relation was seen between patient delay and advanced stage of breast cancer at presentation [11,12]. Though our study does not focus on determining the incidence of COVID-19 among Breast Cancer patients, only a small number of breast cancer patients (17.4%) tested positive which indicates that the suggestion, that breast cancer patients are not at higher risk of COVID-19 than the general population by Vuagnat et al., may have notable footing [22]. Moreover, we found out that the COVID status itself doesn't have the significant impact on delay in presentation, definitive treatment or surgery. Though, for those testing positive, we followed the quarantine protocol of 14 days isolation with one PCR negative report after completing quarantine.

The limitations of this work include a small number of patients from a single center. So, our results may not be generalizable. For this a multi-centric study with a large sample size is needed, to study the overall outcome of COVID-19 on breast cancer patients and disease progression among them. We also did not include histopathological correlation and response of different types of breast cancer to chemotherapy with disease upstaging and covid status. More research work is needed to find relation of disease upstaging with COVID status.

Conclusion

We found that COVID-19 pandemic had no significant impact on delay in presentation, breast cancer management/treatment and disease upstaging as compared to figures available for our population before the pandemic. However, our study showed significant correlation between disease upstaging and COVID positive status of patients. These findings made us think to reconsider our protocols of breast cancer care management among COVID positive patients in this pandemic. Our results might help researchers in formulating new breast cancer management guidelines for patients in current or any anticipated future pandemic.

Conflict of Interest

Authors have no conflict of interest.

Funding

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