DELAYS IN BREAST CANCER TREATMENT SCHEDULES DURING THE COVID-19 PANDEMIC AND PATIENT EXPERIENCE WITH SAFETY PROTOCOLS: A TERTIARY HOSPITAL EXPERIENCE IN GHANA

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Abstract

Objective: As at 30th September 2020 in Ghana 46,626 confirmed cases of COVID-19 with 301 related deaths had been reported. All over the world and in Ghana, elective surgeries including cancer surgeries were delayed. Korle Bu Teaching Hospital had to adjust by performing fewer elective surgeries. The hospital also put into place COVID-19 safety protocols to protect both patients and staff. These included temperature checks, handwashing, limited number of visitors and health education at the Out-patient Departments. This study set out to evaluate how the pandemic affected access to breast cancer treatment, particularly surgery and the patients' experience with the COVID-19 safety protocols.

Methodology: This was a cross-sectional study conducted on all patients who had surgery for breast cancer during the COVID-19 pandemic, from April to September 2020. The areas assessed were OPD, chemotherapy and surgery appointments. Categorical variables were reported as percentages and continuous variables as mean (± SD) or median (with IQR). Descriptive analysis used to represent delays in OPD, Chemotherapy and Surgery appointments.

Results: A total of 103 breast cancer surgeries were identified. Seventy-seven (74.8%) of these consented to participate in the study. This study documented 10.4% delays in OPD attendance, 24.5% delays in chemotherapy sessions and 61.0% postponement of surgeries with a mean waiting time to surgery of 6.4 weeks [SD 3.8]. The enforcement of the COVID-19 safety protocols and the practice of physical distancing made the majority (72.7%) feel safe.

Conclusion: Healthcare capacity and planning should support the national agenda to fight the pandemic without undue delays in cancer care.

Key words: *breast cancer, COVID-19, delay, surgery*

Introduction

On 11th of March WHO declared COVID-19 a global pandemic.[1] On March 12th 2020 the first two cases were confirmed in Ghana.[2] As at 30th September 2020 close to 35 million cases had been diagnosed worldwide with over 1 million global deaths and 46,626 confirmed cases in Ghana with 301 related deaths.[3]

The pandemic has taken a toll on health care systems all over the world and Ghana was not an exception. Hospitals in Ghana were burdened with increasing numbers of COVID-19 cases and resources including personnel were diverted to fighting the pandemic.

World over, elective surgeries including cancer surgeries were delayed to create space for COVID-19 patients, to make more health workers available at treatment centres and to limit exposure of patients and health workers to the virus. Lockdowns and travel restrictions reduced accessibility to oncology services. The economy was also hard hit and out of pocket payments for treatment were even more of a challenge than usual.

Korle Bu Teaching Hospital (KBTH) in Ghana is a referral tertiary centre for many diseases including breast cancer and attends to patients from within the country and the West African subregion. Though the lockdown in Ghana was only 3 weeks travel restrictions at the land borders persisted making movement difficult for patients from neighbouring countries. The hospital's operations were affected by the re-assignment of some health workers (including anaesthetists to man the intensive care units) to designated COVID-19 treatment centres, some theatres and theatre staff were solely dedicated to confirmed COVID-19 cases who required surgeries. Some staff were not available because they had to be isolated or quarantined due to COVID-19 infection or exposure. This became a challenge resulting in a back log of breast cancer surgeries. Regular surgical services at KBTH resumed in September 2020, after Ghana's first peak of the pandemic.

In the UK, breast cancer screening services were suspended during which time routine diagnostics were deferred, only symptomatic cases had diagnostic tests

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and procedures.[4] Consequently, a national, population-based study in England estimated an expected 7.9 – 9.6% increase in breast cancer deaths at 5 years post-diagnosis.[4] Cancer screening services resumed with a huge backlog. At KBTH the usual large free breast screening clinics that characterise the October breast cancer awareness month were also cancelled.

The Korle Bu Teaching Hospital put into place COVID-19 safety protocols to protect both patients and staff. These included temperature checks, handwashing, limited number of visitors and health education at the Out-patient Departments (OPDs). This study set out to evaluate breast cancer patients' experience with the COVID-19 safety protocols and access to treatment, particularly surgery, during the first peak of the pandemic in Ghana.

Materials and Methods

This was a cross-sectional study conducted on all patients who had surgery for breast cancer at the Breast Surgery Unit of the Korle Bu Teaching Hospital in Accra during the COVID-19 pandemic, from April to September 2020.

Data extraction

The following information was extracted from their clinical notes;

- delays in OPD appointments,
- delays in scheduled chemotherapy,
- re-scheduling/postponement of surgery and
- waiting time for surgery.

Patient interviews

Patients were interviewed on the COVID health education they received, the enforcement of safety protocols instituted by the hospital, how these measures made them feel, and on their perspective of how the pandemic had affected their treatment.

Data analysis

Categorical variables were reported as percentages and continuous variables as mean ± standard deviation (SD)or median (with interquartile range, IQR). Descriptive analysis was used to represent delays at the OPD, Chemotherapy suite and Surgery appointments.

Results

A total of 103 breast cancer surgeries were identified from the records of the unit. Seventy-seven of these consented to participate in the study. Of the 26 who did not participate, 7 lived out of Accra, 4 declined to give consent and 15 patients (including one male) could not be reached by phone. All 77 patients interviewed were female. The age range of the study participants was 30 to 81 years with a median age of 50 years [IQR 41-59].

COVID-19 safety protocols

Forty-five (58%) patients recalled that they were educated on COVID-19 during hospital visits. However, 3 patients (3.9%) denied being given any education on the topic and the rest did not recall whether or not they were educated on COVID-19. All 77 patients responded having to comply with compulsory wearing of facemasks, handwashing protocols, and temperature checks at the entrance of the department. A vast majority of the study participants (93.5%, n=72) responded noticing enforcement of physical distancing at the OPD but only 31 (felt 40.3%) they were physically distanced from the staff. As a result of these protocols instituted by the hospital 72.7% of respondents felt safe during hospital visits whilst 14.3% were afraid, 3.9% felt uncomfortable, 1.3% felt anxious and 7.8% were indifferent.

OPD delays

Table 1 shows the OPD delays of study participants as extracted from the clinic folders. Whilst 69 (89.6 %) of patients never experienced any delay in scheduled OPD visits, 8 (10.4%) patients did. Two of them had their OPD appointments delayed by the breast unit. Six self-delayed their OPD appointments; 2 due to fear of exposure to COVID-19, 2 due to movement restrictions during the lockdown, 1 due to inadequate finances and movement restrictions and 1 due to delay in histopathology report. Prior to the pandemic the breast unit does not reschedule OPD appointments as clinics are always in session. It is not known how often prior to the pandemic patients on their own accord delay appointments for personal reasons.

Table 1. Delays in scheduled OPD visits and chemotherapy sessions

Delay reason		Frequency	Proportion (%)
OPD delay (N=77)			
	None	69	89.6
	Delayed by breast unit	2	2.6
Self-delay due to fear of COVID-19 exposure		2	2.6
Self-delay due to movement restriction during lockdown		2	2.6
	Self-delay due to inadequate finances	1	1.3
Self-delay due to delay in histopathology report		1	1.3
Chemotherapy delay (N=53)			
	None	40	75.5
	Rescheduled by breast unit	7	13.2
Self-delay due to movement restriction during lockdown		2	2.6
	Self-delay due to inadequate finances	4	5.2
Surgery delay (N=77)			
	None	30	39.0
	Breast unit postponement	41	53.2
	Self-delay due to fear of surgery	1	1.3
Self-delay due to fear of exposure to COVID-19		2	2.6
Self-delay due to COVID-19 related financial constraints		1	1.3
	Self-delay to ill-health during the period	2	2.6

Chemotherapy delays

Fifty-three patients received chemotherapy during the period. Forty (75.5%) patients never had their chemotherapy sessions delayed. Of the13 (24.5%) patients that experienced delays, 7 were rescheduled by the unit (delayed for a week) and 6 self-delayed: 2 due to movement restrictions during the lockdown and 4 due to inadequate finances during the period (**Table 1**). **Figure 1** shows the length of treatment delays for the 13 study participants. The most frequent chemotherapy delay was for 7 days (1 week) (n=6; 46.2%). One (1) study participant had a chemotherapy delay of 16 weeks. Prior to the pandemic the breast unit did not reschedule chemotherapy sessions but rather insists patients adhere to the prescribed treatment schedule unless medically indicated. It is not known how often prior to the pandemic patients on their own accord delay appointments for personal reasons.

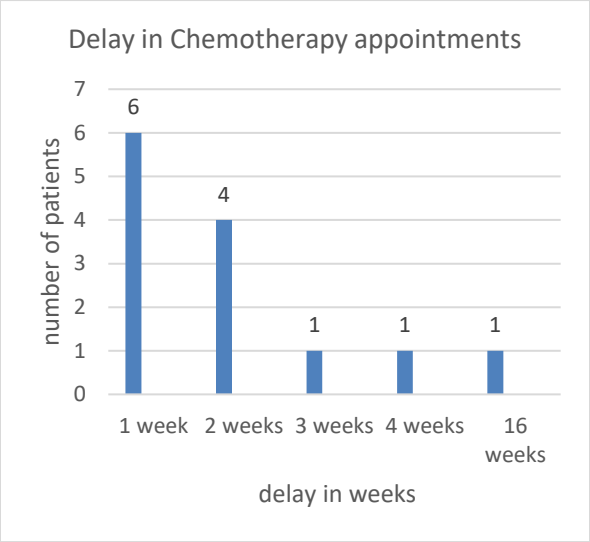

Figure 1. Delays in chemotherapy sessions

Waiting time for surgery

Figure 2 shows the overall waiting time for surgery for all patients, ranged from 1 week to 20 weeks with a mean of 6.4 ± 3.8 weeks. A total of 47 patients (61.0%) had their initial surgery dates re-scheduled whilst 30 (39.0%) had surgery as scheduled (**Table 1**). Of the 47 patients who had rescheduled surgery dates, 41 of them were due to the breast unit postponement and 6 were self-delays (made up of 2 due to fear of exposure to COVID-19, 1 due to COVID-19 related financial constraints, 2 due to ill-health during the period and 1 due to fear of the surgery itself (**Table 1**). Of importance is that the breast unit postponed surgeries for 3 patients on the day of surgery due to COVID-19 related factors. Further analysis shows that the time to initial scheduled surgery dates for all patients were found to range from 1 to 20 weeks with a mean of 4.1 weeks (**figure 3**). However, by the said appointment dates, COVID-related logistic challenges resulted in 61% of patients having their surgeries postponed for varying periods of 1 to 12 weeks (**figure 4**) with a mean postponement of 3.7 weeks [SD 2.78] from the originally booked surgery date.

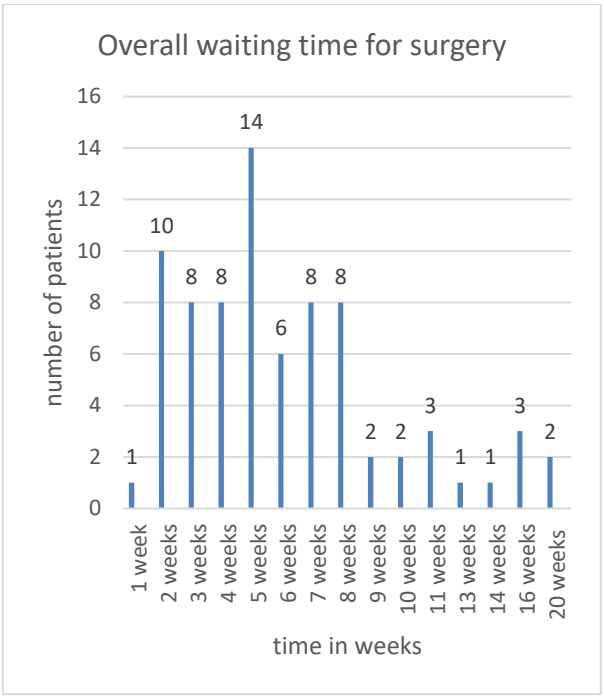

Figure 2. Overall waiting time for surgery

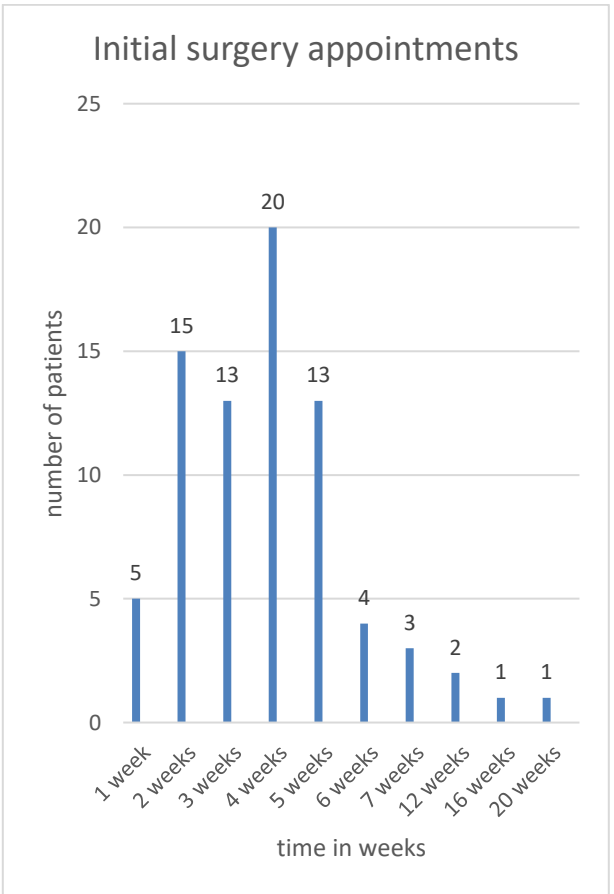

Figure 3. Initial surgery appointments

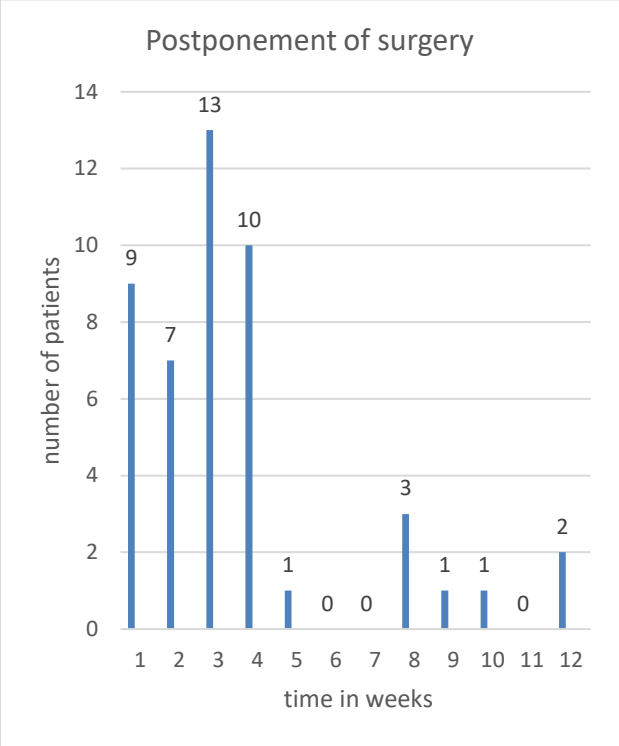

Figure 4. Postponement of surgery

Anecdotally services at the Breast Unit have improved so it is not surprising this study found an improved waiting time to surgery of 4.1 weeks (prior to appointments being postponed) compared with the 5 weeks median waiting time as reported in 2013.[9] Overall patients who were initially scheduled to wait 4.1 weeks to surgery now had to wait 6.4 weeks to surgery with 61% of them suffering postponements of 3.7 weeks. Prior to the pandemic the rate of postponement was only 7.5%.

It has already been established in Ghana that the majority of breast cancer patients present late to hospital for various reasons.[10–12] This late presentation has resulted in poor outcomes and high mortality.[10,13] The health care system already has inherent delays prior to the COVID-19 pandemic and with the advent of the pandemic and patients having surgery postponed by as much as 1 to 12 weeks could potentially have adverse effects on patient outcomes.

Long-term effects of postponement of surgery

Bleicher et al found that increased time to surgery was associated with a lower overall survival for stage I and II disease and worse disease-specific mortality for stage I disease. Breast cancer specific mortality increased with each 60-day interval. They recommended minimizing the time to surgery to reduce patient anxiety and reduce the risk of poorer outcomes.[14] This is corroborated by another population-based study from Singapore which demonstrated a lower overall survival for non-metastatic cancer in patients who had surgery >90 days post diagnosis than in those who had surgery in less than 30 days. Worsening survival was also noted for those who had similar delays in starting adjuvant therapy after surgery.[15]

Long-term effects of delays during the pandemic are yet to be assessed but have been estimated in a UK report that possibly up to 0.7 life-years will be lost per patient from a 2-month delay in referrals.[16]

COVID restrictions

The KBTH serves as a major referral centre in the subregion and the Breast Unit regularly receives patients from sub-Saharan Africa. With movement restrictions in Accra from 30th March to 20th April 2020 and the closure of international borders a few patients were denied access to the facility. Two patients were unable to honour scheduled OPD appointments and 2 were unable to report for chemotherapy as scheduled. Some patients requested medical reports and evidence of hospital appointments to present at security posts when queried about their movements. The economic hardships brought by the pandemic did not spare the patients and even for those who did have treatment as scheduled, they admitted to feeling the brunt. Unfortunately, 1 patient postponed her OPD appointment, 4 did not show up for chemotherapy as scheduled and 1 delayed surgery due to COVID-related financial hardships.

Delays were experienced least in OPD appointments (10%) most of which were self-delayed due to fear of exposure to COVID-19 and movement restrictions during the lockdown period. After the initial surge in the pandemic OPD attendance for new referrals and follow-up cases have been noticed to increase.

Chemotherapy sessions experienced 24.5% delays with a little over half of these due to rescheduling by the breast unit and the rest self-delayed. In the initial couple of weeks of the pandemic the breast unit in an attempt to introduce physical distancing at the congested chemotherapy suite postponed chemotherapy by 1 week for 7 patients. This became necessary in spite of the knowledge that repopulation and resistance of cancer cells is known to encourage tumour regrowth and is accelerated when chemotherapy cycles are unduly delayed.[17]

In a survey of 609 breast cancer survivors in the USA (including those actively being treated) 44% of respondents reported that they had experienced treatment delays due to the COVID-19 pandemic. Most affected was routine follow-up appointments (79%), but delays spanned across all aspects of cancer care; breast reconstruction (66%), diagnostic imaging (60%), laboratory investigations (50%), radiation therapies (30%), infusion therapies (32%), breast cancer surgeries (26%), oral therapy (13%) and genetic counselling and testing (11%).[18]

COVID infection

Cancer patients are immunocompromised from the disease itself and its treatment, therefore are at a higher risk of contracting severe forms of COVID-19 especially if they have surgery or chemotherapy.[19] Available data reveals case fatality rate of COVID-19 is

significantly higher in cancer patients than the overall case fatality rate (5.6% vrs 2.3%).[20,21] This makes cancer treatment risky to the patient. None of the patients in this study were diagnosed with COVID-19 infection. Generally, the infection rate in Ghana and Africa has not been as high as initially feared and perhaps the fear of continued cancer care putting cancer patients at risk of severe forms of COVID-19 infection is not as critical in Ghana as in other countries which have been ravaged by the disease. In the first quarter of 2020 in Hubei province of China a low COVID-19 infection rate of 0.2% was found in early breast cancer patients and the authors conclude that cancer treatment should not be interrupted in areas with such low infection rates.[5]

Patient anxiety and safety protocols

Health workers and hospitals have come to be known as high risk for developing and transmitting the virus as such the general public tend to avoid hospital visits.[22,23] Patient anxiety and fear of contracting COVID-19 from hospitals is keeping cancer patients away from their treatment. Two patients for OPD appointments and 2 patients for surgery appointments admitted fear of exposure to COVID-19 kept them away from hospital. The enforcement of COVID-19 safety protocols by the hospital has been successful as all patients admitted to complying with the compulsory wearing of facemasks, handwashing and temperature checks. These protocols and the practice of physical distancing made the majority (72.7%) feel safe. Despite these measures 19.5% still were afraid, uncomfortable or anxious. Crowding was reduced by limiting visitors to two per in-patient. OPD patients were seen alone for routine consultations, with the exception of those who needed assistance. Hospital visits are a good opportunity for health education which is usually done at the OPD whilst waiting to be seen however, only 58% recall that they received any such education on COVID-19. This calls for the hospital to intensify health educational talks on this all-important topic.

Though patients have been known to delay their breast cancer treatment for a myriad of reasons,[10] delays have not previously been on the part of the unit and a few patients approached us questioning whether the rescheduling of their surgeries and chemotherapy would not adversely affect their outcomes. The psychological impact of treatment delays to cancer patients has been recognised and this emotional distress is known to have negative effects on clinical outcomes of cancer treatment. Various coping strategies have been outlined and the use of telemedicine, social media and virtual patient support groups have been useful.[24]

Conclusion

This study has revealed that breast cancer treatment at KBTH during the first peak of the COVID era in Ghana was characterized by delays particularly for surgery with as much as 61% of elective breast cancer surgeries being postponed. Patients were initially scheduled to wait 4.1 weeks to surgery now had to wait 6.4 weeks to surgery with 61% of them suffering postponements of 3.7 weeks. There were far less delays of 24.5% and 10.4% in chemotherapy and OPD services respectively. Healthcare capacity and planning should support the national agenda to fight the pandemic without undue delays in cancer care.

Recommendations

There is a need in Ghana for the training of Intensivists who are solely dedicated to the running of Intensive Care Units to free up anaesthetists to concentrate on surgeries.

As the nation redistributes resources to fight the pandemic, other healthcare services particularly cancer care should not be interrupted as this could result in poor patient

Declarations

Ethical considerations

Ethical approval was obtained from the Korle Bu Teaching Hospital IRB (KBTH-IRB/000117/2020). Informed consent was sought and obtained from each study participant.

Consent to publish

All authors agreed to content of this paper.

Conflict of interest

Nothing to declare.

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Availability of data

Data is available on request to the corresponding author.

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