

## Original Research Article

# Breast cancer in North-Central Nigeria: challenges to good management outcome

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### ABSTRACT

**Background:** Breast cancer is a major health burden globally. Now ranked the number one cancer in females, and the leading cause of cancer deaths in females in our environment, outcome indices have remained poor in developing countries. The aim of this study was to ascertain the major challenges to good management outcome of breast cancer patients in our centre.

**Methods:** The case notes of all histologically confirmed cases of breast cancer presenting to our centre from January 2016 to December 2017 were reviewed. Information on the variables of interest were extracted using a proforma.

**Results:** Fifty-five (55) patients' case notes were reviewed. All were females. 30.9% of the patients had early disease versus 67.3% with advanced disease. 76.4% had invasive ductal carcinoma. More lesions occurred on the left and the upper outer quadrants. 46% of the 37 patients with advanced disease who required chemotherapy completed the prescribed six courses. None of the patients who required radiotherapy received it. Only 1.8% of those who required hormonal therapy were still taking them at two years follow-up. 3.6%, 11%, and 0% used alcohol, oral contraceptives and tobacco respectively. 81.8% had been lost to follow-up at two years while 14.5% had died while on admission.

**Conclusions:** This study identified late presentation with advanced disease; poor compliance and adherence to treatment strategies, and poor access to adjuvant therapy as the major challenges to good outcome for this disease.

**Keywords:** Breast cancer, Challenges, Management outcome

### INTRODUCTION

Breast cancer is the commonest malignancy affecting women in many parts of the world. Globally it accounts for 18.4% of female cancers. It is estimated that one in eight Caucasian women (one in 14 blacks) in the USA (double the risk in 1940) and one in 12 in Britain will develop breast cancer in their lifetime. The incidence is rising.<sup>1</sup> Currently the commonest malignancy in Ibadan Nigeria. In Accra, Ghana, it accounts for about 16.0% of all cancers being now the commonest cancer in the female.<sup>1</sup> Over 1 million new cases are diagnosed annually, resulting in over 400,000 annual deaths and about 4.4 million women living with the disease.<sup>2</sup>

Breast cancer and its treatment constitute a great challenge in resource-limited societies. The hallmarks of the disease in Africa are patients presenting at advanced stage, lack of adequate mammography screening programmes, preponderance of younger pre-menopausal patients, poor access to adjuvant therapy and a high morbidity and mortality.<sup>3-5</sup>

Chalya et al in North Western Tanzania noted a poor utilization of adjuvant chemotherapy by their patients resulting in non-completion of the prescribed courses and thus impacting negatively on outcome.<sup>4</sup>

Other factors contributing to poor outcome are: poor access to radiotherapy, patients' use of alternative medicine and prayer house treatment and inability to afford hospital care.<sup>6,7</sup>

Nigeria has one of the highest burdens of breast cancer in Africa.<sup>8</sup>

This study was undertaken to assess the challenges to the management of breast cancer in our centre and how this impacts on outcome.

**METHODS**

This was a cross-sectional retrospective study in which the case notes of all histologically confirmed breast cancer patients presenting to our centre, University Of Abuja Teaching Hospital Gwagwalada Abuja, Nigeria, between January 2016 and December 2017 were identified using health information records from the Surgical outpatient clinics, casualty, surgical wards and the Theatre and reviewed for study variables including: demographics, menopausal status, duration of illness, clinical stage of the disease using the American Joint Committee on Cancer, AJCC, classification, histopathological type, treatment modalities offered and outcome. This information was collected using a proforma.

**Inclusion criteria**

Inclusion criteria were all patients who presented with breast cancer within the period of the study that was histologically confirmed; willingness to participate in the study.

**Exclusion criteria**

Exclusion criteria were all patients who had conflicting histology reports; unwillingness to participate in the study

Data was analyzed using the Statistical Package for the Social Sciences, SPSS version 20 (SPSS Inc., Chicago, IL., USA)

**Ethical clearance**

Approval was obtained from the hospital Ethics Committee to carry out the study.

**RESULTS**

**Demographics**

55 patients' case notes were reviewed. All 55 (100%) were females. A good number of the patients, 19 (34.5%), were house-wives (Table 1).

**Table 1: Patients' characteristics.**

	Frequency	Percentage (%)
<b>Marital status</b>		
Single	6	10.9
Married	49	89.1
<b>Occupation</b>		
Unemployed	1	1.8
Clergy	1	1.8
Student	2	3.6
Teaching	5	9.1
Civil servant	12	21.8
Business/Trading	15	27.3
House wife	19	34.5
<b>Tribe</b>		
Hausa	2	10.9
Yoruba	6	38.2
Ibo	21	3.6
Others	26	47.3
<b>Religion</b>		
Muslim	14	25.5
Christian	41	74.5

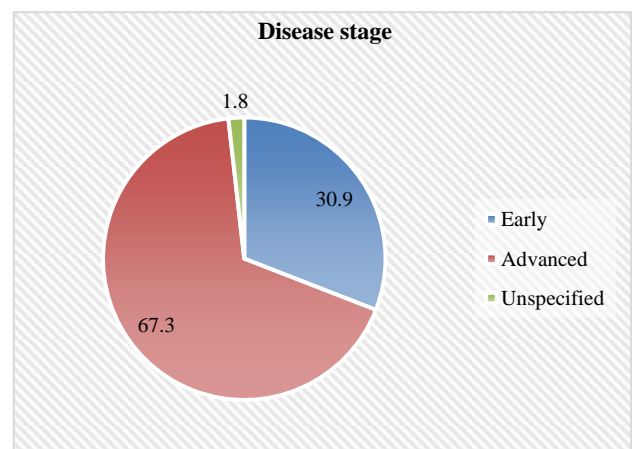
The mean age of the patients was 42.9 years with a range of 25-70 years.

The mean parity was 2.6 with a range of 0-12. Mean age at menarche was 14.6 years.

**Duration of symptoms and clinical stage of disease at presentation**

Mean duration of symptom 1.4 year with a range of 3 weeks to 10 years.

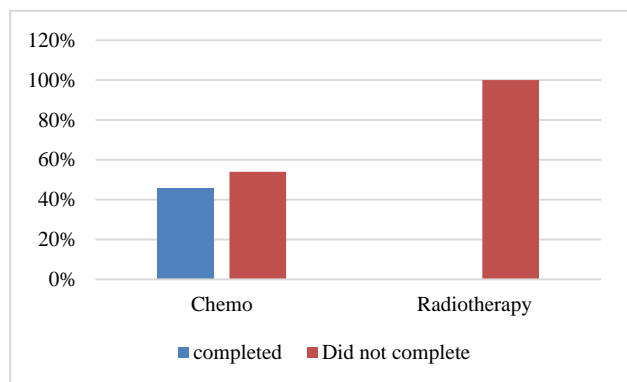
17 (30.9%) patients presented with early disease (AJCC stage I & IIa). 37(67.3%) presented with advanced disease (AJCC stage IIb and above). 2(3.6%) had an unspecified disease stage (Figure 1).



**Figure 1: Clinical stage of disease at presentation.**

**Treatment adherence**

36 (97.3%) of the 37 patients with advanced disease received some form of chemotherapy but only 17 (46%) completed the prescribed six courses. Of the 37 patients with advanced disease who required radiotherapy at the surgical site following mastectomy; for axillary disease or control of pain due to bone metastasis none received it. All 55 patients who required hormonal therapy commenced it but only 2 (3.6%) were still taking it at two years follow-up (Figure 2).

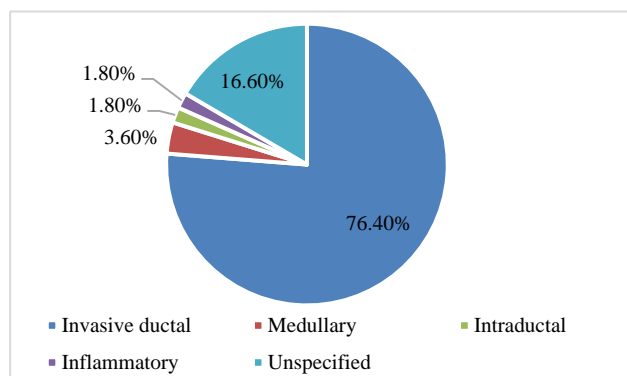


**Figure 2: Adjuvant therapy utilization/completion rates.**

None of the patients completed their treatments as prescribed. 8 (15%) absconded after the first visit, 10 (18%) refused mastectomy.

**Histopathological sub-types**

42 (76.4%) had invasive ductal carcinoma. 2(3.6%) cases were medullary carcinoma. Intraductal carcinoma represented 1.8% (1 patient). 1(1.8%) had inflammatory carcinoma. The histology of 9(16.6%) patients was not specified (Figure 3).



**Figure 3: Histologic sub-types.**

**Location of lesion**

More lesions occurred on the left breast with 22 (40%) cases in the right and 26 (47.3%) in the left breasts. In

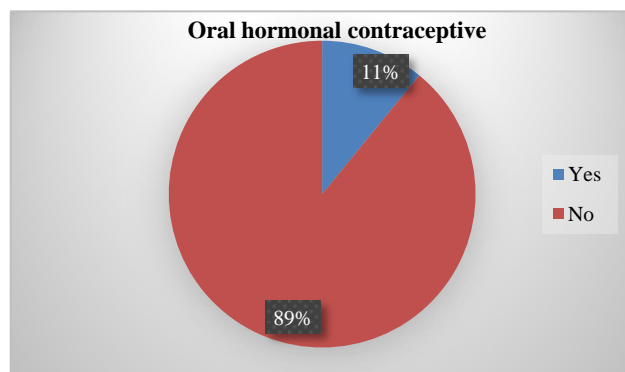
those patients whose disease were restricted to one quadrant at presentation, majority of the lesions were located in the upper outer quadrants 15 (27.3%) on the left) and (11 (20%) on the right). 1 (1.8%) presented with bilateral disease (Table 2).

**Table 2: Distribution of lesions by quadrant.**

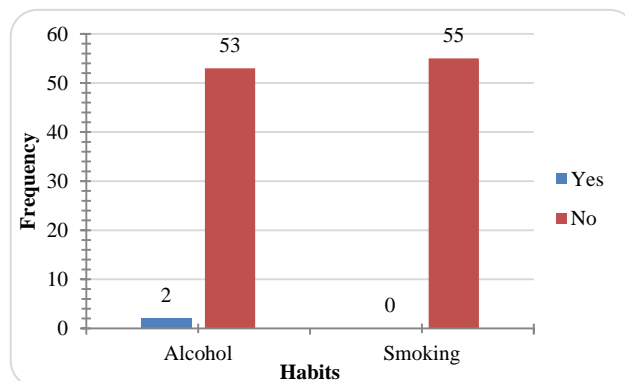
Quadrant involved	Frequency	Percentage (%)
Not specified	2	3.6
Lt upper outer	15	27.3
Rt upper outer	11	20.0
Nipple areolar	4	7.3
All lt breast	10	18.2
All rt breast	9	16.4
Lt lower inner	0	0
Lt lower outer	1	1.8
Bilateral	1	1.8
Rt lower outer	1	1.8
Rt lower inner	1	1.8

**Other risk factors**

Two patients (3.6%) used some form of alcohol. All 55 (100%) did not use any form of tobacco. 11% used oral contraceptive pills (Figures 4 and 5).



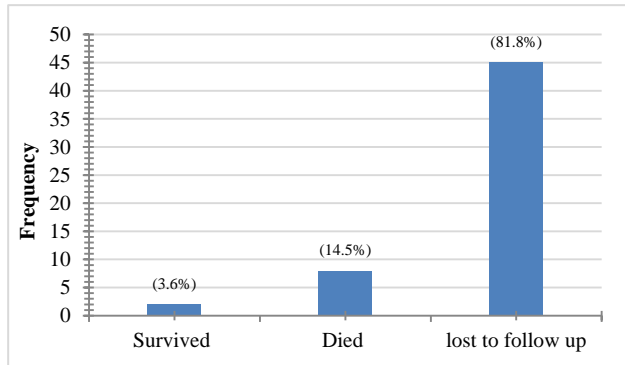
**Figure 4: Percentage utilization of oral hormonal contraceptive.**



**Figure 5: Percentage utilization of alcohol and tobacco among patients.**

### Follow-up

Only 2(3.6%) patients (1 medullary and 1 intra-ductal carcinoma) were still attending the clinic at years follow-up. 8(14.5%) had died during admission within this period while 45(81.8%) patients had been lost to follow-up



**Figure 6: Management outcome at two years.**

### DISCUSSION

Majority of the patients (67%) in this study presented with advanced disease (AJCC stage 11b and above). The reason for this late presentation was not explored in this study. This was similar to the findings of Kene et al who found that majority of their patients presented with advanced disease.<sup>5</sup> The reason for the late presentation was not elucidated in their study. Similar observations were also made by Rambau et al and Mabula et al in their own studies.<sup>9,10</sup> Chalya et al noted in their study that only a low proportion of their patients had breast conserving surgery due to late presentation with advanced disease.<sup>4</sup>

Fregene et al also noted in their own study that most breast cancers in developing countries were diagnosed at advanced stage resulting in limited treatment options and poorer outcomes.<sup>8</sup>

The mean duration of symptoms in this study was 1.4 years with a range of 3 weeks to 10 years. This finding was dissimilar to what Richard et al in Britain noted in their own study.<sup>11</sup> They reported that a third of patients with breast cancer presented and commenced treatment more than three months from onset of their symptoms whereas a quarter presented more than six months after onset of symptoms. They asserted that patients who delayed 3 months had a 12% lower 5 year survival compared to those with shorter delays. Complex interplay of personal, social, and cultural factors appear to influence a woman's decision to delay before presentation.<sup>12</sup> This long duration of symptoms before seeking medical care in our patients was due mainly to patients preference for alternative treatments (traditional and/or church healings) before presenting to the hospital when alternative treatments have failed. In his study in Enugu, Ezeome found that the time between symptom

onset and treatment was more than 3 months in over 85% of the patients and more than 6 months in nearly 72% of the patients.<sup>7</sup> According to Ezeome, the main reasons, gotten from his study includes low level of appreciation of implications of breast symptoms, inability to afford hospital care, patients use of alternative medicine and prayer house treatment, fear of mastectomy, patient pre-occupation with family, social and domestic problems, patients being discouraged by friends and relations.

In this study, none of the patients completed their treatment as prescribed. This non-completion was more with utilization of radiotherapy where only none of the patients requiring radiotherapy had it. The reason for this was probably due to cost and non-availability of functional radiotherapy machines as there are only three centres in northern Nigeria that offered radiotherapy services; even then, the machines were always breaking down leading to long waiting queues and treatment delays which negatively impacted outcome. Additionally, our centre has no radiotherapy machine and patients were often referred to the other centres for this service. Similar findings were also made by other studies.<sup>4,13</sup> According to Chalya et al, only 19% of their patient requiring radiotherapy had access to this modality of treatment.<sup>4</sup> Their centre had no radiotherapy machine and suitable patients who could afford to travelled long distances to the nearest available facility. The other reason for this poor utilization according to them was lack of fund

It was also observed in this study that about 46% of patients who required chemotherapy completed the prescribed six courses. This may be due to the cost of these drugs and the side-effects. None of our patients had health insurance and had to make out-of-pocket expenses to procure their medications. Chalya et al also noted a poor utilization of adjuvant chemotherapy by their patients.<sup>4</sup> This they attributed partly to the fact that majority of the patients who were offered chemotherapy defaulted and did not complete the courses. The course of this default was not stated. This observation is in keeping with the other studies in Africa.<sup>5,14</sup> This poor compliance is a major challenge in breast cancer management especially in resource-poor settings. Some of the reasons according to Ibrahim et al and Lawal and Adesunkanmi can be ascribed to financial difficulty, relatively feeling well after commencement of chemotherapy, resorting to alternative treatment and drug site effects.<sup>3,14</sup> In our centre tamoxifen was routinely given to all patient with histologically confirmed breast cancer either as adjuvant or primary therapy because of its benefits in reducing recurrence and improving overall survival in all age groups in oestrogen receptor positive breast cancer according to Gakwaya et al.<sup>15</sup> This is irrespective of the hormonal receptor status as facilities for immuno-histochemistry is lacking in our centre and most other centres around us. Initial compliance to hormonal therapy in our study was 100% but only two patients representing approximately 1.8% were still taking hormonal therapy at two years follow-up. This relatively high utilization of

hormonal therapy in our patients may be due to the cheap cost of tamoxifen which is the main agent used in our centre as other hormonal agents are expensive and not readily available to patients. In their own study, Kun-pin et al recorded a hormonal adherence rate of 61%.<sup>16</sup> According to them, young age and experience of adverse effects were some of the risk factors for non-adherence. They observed that interruption and non-adherence to long term adjuvant hormone therapy was associated with adverse survival outcome of breast cancer women. Further, they noted that treatment interruption and non-adherence to adjuvant hormonal therapy were found to be associated with increasing all-cause mortality of Asian breast cancer women.

In their own study, Ayo et al recorded a non-compliance rates of 7%, 4% and 37% for chemotherapy, radiotherapy and hormonal therapy respectively.<sup>17</sup> According to them, old age was a risk factor for non-compliance with chemotherapy while young age was a risk factor for non-compliance to hormonal therapy. They concluded that non-compliance to tamoxifen was associated with a decreased 5-year survival and distant metastasis-free survival.

Invasive ductal carcinoma was the commonest histological type in our study constituting 76%. This was similar to other studies which reported invasive ductal carcinoma as the most common histologic subtype.<sup>5,18-20</sup> More lesions were found on the left than the right in our study (47% vs 40%). This was similar to the findings of Kene and his colleagues.<sup>5</sup> The reason for this was not apparent from our study. However, this finding differed from that of Sule and Obaseki in the Niger Delta area of Nigeria which had a relative equal distribution in both breasts with a right to left ratio of 49.1% to 50.1%.<sup>19</sup> In contrast to this Oguntola and his colleagues found that 81% of the first tumors were on the right for those who had bilateral disease.<sup>20</sup>

In those patients whose disease were restricted to one quadrant at presentation, more lesions were found in the upper outer quadrants of both breasts-with 27.3% on the left and 20% on the right. This may probably be because of a greater volume of breast tissue located in the upper outer quadrants which also includes the axillary tail of the breast. Kene et al also had similar finding in their study. Bilateral disease occurred in 1.8% in our study.<sup>5</sup> This is higher than the finding of Sule et al who reported bilateral disease in approximately 0.5%.<sup>19</sup> They also found more of the first tumor in the outer quadrants while more of the contralateral tumors occurred centrally.

Smoking, alcohol or use of oral contraceptive pills appeared to play little role as risk factors in our patients as only 3.6%, 11%, and 0% used alcohol, oral contraceptive pill and tobacco respectively. This is similar to the findings of Oguntola et al who observed that approximately 0.5% and 1.2% smoking and used oral contraceptive pill in their study.<sup>20</sup>

At two years follow-up, only 2 (1.8%) patients were still attending the out-patient clinic. 8 (14.5%) had succumbed to the disease in the hospital either at first or subsequent re-admissions; 45 (81.8%) had been lost to follow-up. Temidayo et al had also observed in their study that most patients were seen at the surgical outpatient clinic for follow-up care for less than two years as most had been lost to follow-up.<sup>21</sup> This low follow-up figures in our study may be due to the challenges of coming to the hospital every month for adjuvant chemotherapy as most of the patients had to travel great distances to come to the hospital. Another reason may be due to inability to procure the prescribed medicines as the patients are often come to have their appointments re-scheduled to a later date to allow them to procure their anti-cancer drugs. Additionally the lack of a concrete plan on how to keep in touch with the patients may also have contributed to this. Sutter et al in their review noted that follow-up was poor among African patients with breast cancer, which they observed hindered accurate assessment of the efficacy of treatment paths as was also observed in this study.<sup>22</sup>

## CONCLUSION

Majority of our patients presented with advanced disease which constituted a major challenge to management with good outcome. Poor compliance and adherence to treatment coupled with limited access to adjuvant therapy especially radiation therapy also played a role. However, poor follow-up figures hindered a more conclusive assessment of intervention effects.

### *Limitations of the study*

- Inadequate data entry into patient case notes that led to incomplete information on some variables that were studied.
- Poor follow-up rate which made it impossible to ascertain the true figures in terms of management outcomes.

### *Recommendations*

- Institution of regular screening exercises and improved awareness campaigns to enhance early detection of breast cancer among the population.
- Procurement and installation of more radiotherapy machines in more centres by the Government in order to improve patients' access and reduce the waiting time for patients who require such services.
- Subsidizing the cost of anti-neoplastic drugs through the National Health Insurance Scheme to make them more affordable to patients.

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*Conflict of interest: None declared*

*Ethical approval: The study was approved by the Institutional Ethics Committee*

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