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Discussion

Despite the fact that BRCA is the most common cancer in females globally, there are ethnic and geographical variations in its age distribution. In our local environment in Nigeria, patients generally present at a much younger age group when compared with their Caucasian counterparts. In this study, we observed that BRCA occurred most commonly between the age group brackets of 40 and 49 years. This accounted for 36% of all BRCA cases. Again, almost two-third (61%) of all BRCA patients was diagnosed between the 4th to 5th decades. Based on this finding, it could be asserted that the majority of BRCA are seen in pre-menopausal women in our environment. This finding is in tandem with studies by Aftab and Rashid[9] in Pakistan, Asia where BRCA was found the most commonly between 30 and 50 years. Furthermore, similar reports documented by researchers of Sub-Saharan African have also clearly shown that most BRCA cases in Africa are found most commonly in the 4th and 5th decades of life.[10,11] Specifically studies from Cameroun by Kemfang Ngowa *et al*. reported that 66% of patients with BRCA occurred below 50 years and were all pre-menopausal and perimenopausal women.[12] Yet again, in India subcontinent, the average peak age of occurrence was comparable with what obtains in Sub-Saharan Africa. However, this finding is completely a variance with reports from the United States and European series where most patients with BRCA occurred in post-menopausal women with a peak age incidence in the 7th decades of life.[13] Once more, in the United States whites, the average peak age of BRCA occurrence was 61 years.[13]

The reason for this early age of occurrence of BRCA in this study and other African series is not certain. Nevertheless, it can partly be attributed to low life expectancy in Nigeria and other African countries. It is obvious that Nigerian and indeed African women may not live long enough to present with post-menopausal BRCA. Whether or not, this finding is a true reflection of increase incidence of BRCA in pre-menopausal women in our environment, is a question that needed to be further researched. Once more, high parity among Nigerian and African women have also increase the risk of BRCA before the age of 45 years.[13]

Interestingly, studies have indicated that both African-American and black women in the United Kingdom have similar age of presentation of BRCA to native African women. In spite of the better health-care and higher life expectancy, most cases of BRCA in them present at pre-menopausal and perimenopausal similar to what obtained in African women. This similarity may not be unconnected to genetics involving the BRCA one and two genes in blacks.[14] Furthermore, it has been suggested that blacks women particularly Africans have higher levels of estrogen exposure, which pre-disposes them to higher rates of cell division and deoxyribonucleic acid copying error, resulting eventually to higher risk of early cancer cases.

Our study revealed that late presentation (Stages III and IV) constituted 76.2%. This finding is similar to reports of other researchers. Osime and Dongo[15] and Anyanwu *et al*.[16] reported 67% and 64% respectively. Adesunkanmi *et al*.[17] observed that 74% of BRCA present in Stages III and IV. The reason for the late presentation is partly attributable to poverty and ignorance as most cases of late presentations are seen in developing countries including Nigeria.

Histomorphological patterns of BRCA as an important prognostic factor have been well documented. Studies have shown that patients with invasive ductal carcinoma (NST) have a poorer prognosis when compared with other types of BRCA. In this study, invasive ductal carcinoma of NST was the most prevalent histopathological type encountered. This accounted for 70% of all BRCA cases. This finding is similar to other findings in Nigeria. Ekanem and Aligbe in Benin-city reported that invasive ductal carcinoma constituted 75% of all BRCA cases.[18] Similarly, Dauda *et al*. reported that 78.8% of all BRCA was invasive ductal carcinoma.[19]

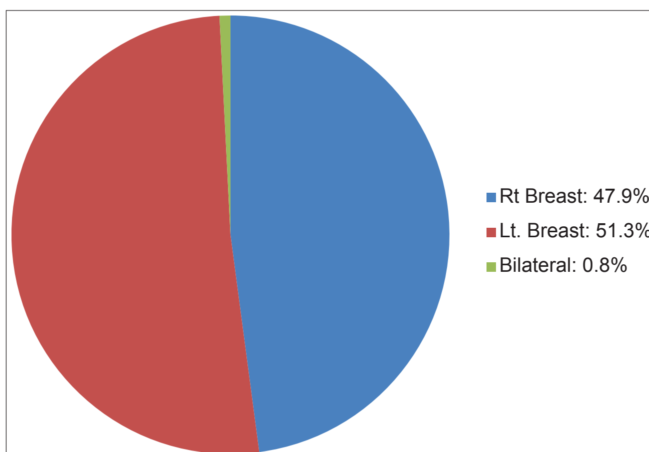

Figure 1: Anatomical sites of breast cancer

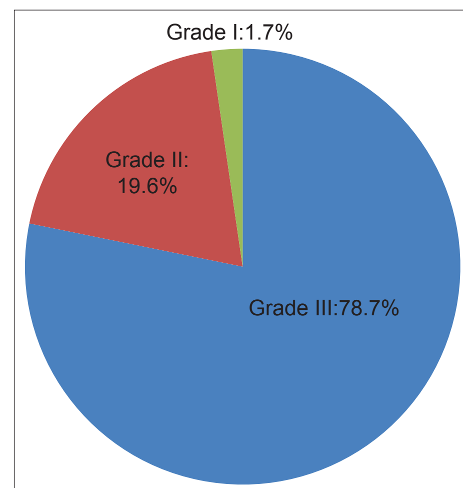

Figure 2: Histological grades of breast cancer

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Furthermore, similar studies from India reported that invasive ductal carcinoma constituted 88% of all BRCA cases.[3] This is further supported by other reports globally.[20,21] Reports from United States Caucasian series also have it that invasive ductal carcinoma was also the most common BRCA.[20] In our study, invasive lobular carcinoma occurred a distance second. This constituted 7.2% of all cases. This again, indeed is comparable with a similar reports by Dauda *et al*. and Nggada *et al*. where it constituted 6.7% and 6.6% respectively.[19,21] This yet again is at variance with studies done in the United States invasive lobular carcinoma accounted for 15%.[20,21] The reason for this variation is partly due to the fact that in the United States all H and E slides are further re-confirmed with immunohistochemistry. In this study, intraductal carcinoma accounted for 5.7% of all BRCA cases. Similar report by Nggada *et al*. in Maiduguri, North-Eastern Nigeria and Kene *et al*. in Zaria, North-Western Nigeria revealed that intra-ductal carcinoma constituted 6% and 3% respectively.[21,22] Nevertheless a very high incidence of 20% of intra-ductal carcinoma was documented in the United State.[23] The reason for this marked variation is attributed to very efficient screening programs and high level of awareness of BRCA with subsequent early presentation in the United States.

In this study, the left breast with the upper outer quadrant as the most commonly affected anatomical sites accounting for 51.3% and closely followed by the right breast accounting for 47.9% and the least common was bilateral breast tumor constituting 0.8%. From this observation, unilateral breast lesions therefore constituted 99.2%. This is similar to other studies done by Saxena *et al*.[3] in India and Ekanem and Aligbe[18] in Benin, where unilateral breast lumps accounted for 99.0%, 99.2% respectively. This again is similar to work carried out by other researchers locally and globally.

In general, studies have it that, histological Grade III breast carcinoma characterized by high grade nuclear atypia, extensive necrosis and increase number of positive nodes is more common in African women than Caucasians. More specifically in Nigeria and Tanzania, majority of BRCA constituting 56% and 45% have Grade III breast carcinoma.[11,24] This is completely at variance with reports from Finland where histological Grade III BRCA constituted only 16%.[21] Once more, studies confirm the similarities of histological grade of BRCA in black British and African-American women to their African counterparts.[24] This is partly due to the reason why the BRCA progresses more aggressively in black women as compared with their caucasian counterparts.

One major challenge encountered in this study is the follow-up to management of patients. Most of the patients may not have come back for follow-up biopsies for histology after initial treatment with surgery, chemotherapy, radiotherapy and hormone therapy. This is similar to observations of other researchers.[15-17] The reasons partly attributed to this observation is based on the fact that some patients may have being referred to other centers with immunohistochemistry facilities and hormone therapy for further management. Again some of the patients with advanced stages of the disease may have died in the process of looking for a cure. Still financial constraint, poverty and search for alternative medication may also influence the follow-up of these patients.

Limitations

The cases in this study did not have immunohistochemistry done to determine the hormone receptor status. The reason for this is due to the fact that this center has various challenges in carrying out immunohistochemistry. Hormone receptor analysis is therefore not part of the result analyzed.

Conclusion

Nearly two-third (61%) of all BRCA patients was diagnosed in the 4th and 5th decades of life. Again, at least nine out of every 10 cases of BRCA in our environment are invasive with majority as invasive ductal carcinoma of NST and majority presenting as Grade III tumors. In our environment most cases present late due to poverty, lack of awareness, alternative medication and psychological fear that mastectomy may interfere with their womanhood.

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