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Breast Cancer in Young Adolescent: University of Port Harcourt Teaching Hospital 10 Year Experience.

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ABSTRACT

Breast cancer is an unpredictable disease in the sense that some patients may present with relatively early disease and die of widespread metastases. Young age at the time of diagnosis of breast cancer is an independent factor of poor prognosis.

AIM:

The purpose of this study is to determine the occurrence of breast cancer in the very young Adolescent patients and the outcome of treatment in our environment.

KEY WORDS*: Breast cancer, young adolescent women, poor treatment outcome.*

INTRODUCTION:

Breast cancer (BC) is an unpredictable disease in the sense that some patients may present with relatively early disease and die of widespread metastases within six months to one year, while others present with fairly advanced disease and yet survive longer[1-4]. Approximately less than 4% of all BC are diagnosed in women below the age of 35 years[1]. Studies have shown that BC in the younger population is more aggressive, with higher mortality and recurrence rates compared with older women[2-6].

Young age at diagnosis influences prognosis negatively[1,6,]. This could partly be explained as young women more often are diagnosed at advanced stage of disease, more-aggressive phenotype, higher proportions of high-grade, lower estrogen receptor (ER) positivity, and over-expression of human epidermal growth factor receptor 2 (HER2)[7-10].

This is a retrospective study of cases of BC of younger age not more than 22 years for a period of 10 years, January 1999-December 2009, treated by the General Surgery Units at the University of Port Harcourt Teaching Hospital, Port Harcourt (UPTH).

PATIENTS and METHOD:

This retrospective study, after Ethical approval, was conducted by the General Surgery Unit D of the University of Port Teaching Hospital (UPTH), Port Harcourt, a 500 Bed tertiary hospital that cares for most of the populations of Rivers and Bayelsa, parts of Delta and Imo States. A proforma was used to collect from hospital records, the following data, riz Age, Sex, Duration of symptoms, Risk Factor (Family History), Site of tumour, Stage of tumour, Histology and management outcome of all cases of BC not more than 22 years of age. All cases were histologically diagnosed by either fine needle aspiration or open biopsy, and were treated at UPTH. All cases seen between January 1999 and December 2009 were included in the study. Clinical pictures were taken from those that consented during treatment. Record of the total number of all cases of BC diagnosed and treated during the same period was also noted.

All the patients had neoadjuvant chemotherapy with intravenous Cycholphosphamide 500mg/m^2, Methotrexate 40mg/m^2 and 5-Fluorouracil 600mg/m^2 every 3 weeks. Debulking (toilet) Mastectomy with axillary clearance was the operative choice, which was done for 6 patients that were fit for surgery. This was closely followed by adjuvant chemotherapy using Paclitaxel 250mg and Epirubicin 50mg/m^2 every 3 weeks. Blind administration of Tamoxifen 80mg daily as neoadjuvant and 20mg daily as adjuvant hormonal therapy was given, although the Oestrogen/Progesterone receptor status were not determined. There were no facilities for Hormone receptor status studies during the period of this study. Radiotherapy was not done as it is not available at this centre and the patients were unwilling based on the cost at centers with such facilities.

RESULTS:

A total of 885 cases of BC were diagnosed, actively treated and followed-up during the period of study. Eight (0.9%) out of the 885 cases, were age 22 and below. The age range was 16-22 years. They were all females. Duration of symptoms at presentation ranged from 9-12 months. None had any family history of BC or any other identifiable risk factors. The disease affected the right breast in 5 (62.5%) patients and left breast in 3 (37.5%). All were in the upper outer quadrant of the breast with palpable axillary lymphadenopathy.

Three patients (37.5%) presented with Stage III and five (62.5%) Stage IV, Fig 1-4 (Manchester) diseases. There were metastases to the Skull in 3 patients (37.5%), Liver in all 8 (100%) and Lungs in 5 (62.5%). Histologically all were Anaplastic. **Figures 1 and 4** had metastasis to the skull, liver and lungs. In **Figure 2**, the disease was limited to the breast and axilla.

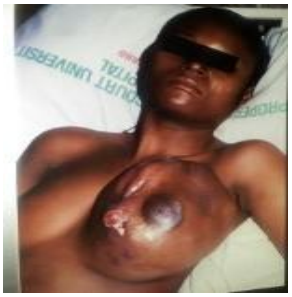

FIGURE 1: 20 YEARS OLD, WITH STAGE 4 LEFT BREAST CANCER

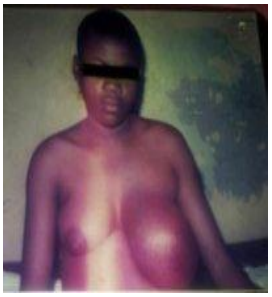

FIGURE 2: 17 YEARS OLD WITH STAGE 4 LEFT BREAST CANCER

FIGURE 3: 19 YEARS OLD WITH STAGE 4 LEFT BREAST CANCER

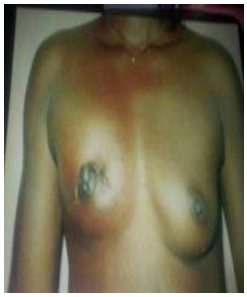

FIGURE 4: I6 YEARS OLD WITH STAGE 4 RIGHT BREAST CANCER

All the 8 patients died within 9 months of presentation despite having had neoadjuvant chemotherapy and 6 cases adjuvant chemotherapy after debulking (toilet) mastectomy.

Most of our BC patients were lost to follow-up within 3 years after their surgery and course of chemotherapy. 586 out of the total of 885 were followed up for 3 years, giving a 3 year survival rate of 66.2% of all cases treated during the study period.

DISCUSSION:

Reports of BC in the adolescent population consist mostly of isolated patients. There is paucity of local literature of studies in young adolescent BC. BC is said to be rare in the pediatric population and less than 0.1% of breast cancers occur in children[11,12]. BC in the population studied, though rare, accounted for 0.9% of all BC during the period of study, is suggestive that it may be more common in our environment than in the areas where such studies have been carried out[4,8-15]. Fente et al reported 3 cases of patients with BC in 20 year olds and below, out of 42 (7.14%) of BC treated at Niger Delta University Teaching Hospital, Okolobiri within 3 years[16]. Age as young as 6 year old female with BC has been reported in the literature[15]. BC in children usually present with an enlarging, painless breast mass. These lesions are usually firm, non-tender, immobile, poorly circumscribed, and located in the lateral breast quadrants, most often taken as part of normal development as in our patients. This seems to be the reason for the late presentation. Unlike as in adults, nipple discharge and retraction are uncommon[15].

Lack of routine mammography screening for women in our environment, makes it difficult to detect early presentation, thus allowing for late presentation of BC with metastasis. Even if younger women undergo mammography screening, the imaging is less sensitive than breast imaging in postmenopausal women because the dense breast tissue in young women can obscure radiologic features of early BC [10]. There is increased breast cancer–specific mortality in younger women due to the result of advanced stage of disease at diagnosis and characteristic unfavorable biologic parameters[10]. Younger women tumors are said to be more likely to be higher grade, ER-negative, and PR-negative, characteristics associated with more aggressive tumors and poorer prognosis[10]. All our 8 patients histologically were anaplastic. Gogo-Abite et al[17] has stated that majority of BC in this centre are poorly differentiated invasive ductal carcinoma, "not otherwise specified" that exhibit high proliferation ratio, associated with poor host cellular immune reaction, which attributes translate to poor prognosis. Anders et al[11] genomic analysis on BC in young women found

367 gene sets differentially expressed in young women's tumors, but tumors arising in older patients did not share any common gene sets, supporting the concept that tumors developing in younger women are biologically different from tumors in older women and tend to be more aggressive with unfavorable biologic markers, which portend a poor prognosis[11]. Anders et al[11] study suggests that breast cancer in younger women can be characterized by less hormone sensitivity and higher HER-2 and epidermal growth factor receptor expression. Studies have suggested that BC in younger women is a unique disease entity that might need a different treatment strategy than what might be efficacious for older women with breast cancer[7-15]. Because breast cancer is typically a disease of older women, the majority of BC studies have concentrated on older women and few studies have focused on age as the primary exposure.

All 8 our patients died within 9 months of presentation. Pathologic variants of BC in the younger age group include intraductal, lobular, medullary, inflammatory, and secretory carcinoma[12-14]. Secretory carcinoma constitutes the majority of cases and, in a recent compilation of 39 patients, accounted for 84 %[15].

Given the small number of reported cases, there is little valuable information to guide the treatment of BC in adolescent. Surgical treatment has ranged from local excision to radical mastectomy[9]. Axillary node dissection is said not to be done consistently[10]. Gnerlich et al[10] recommended that the treatment be guided by the histological subtype of tumor and modified radical mastectomy with axillary node dissection to minimize the risk of recurrent and metastatic disease as the surgery of choice. There is minimal experience with lumpectomy and radiation therapy in children. Adjuvant therapy is advised to be considered for metastatic disease. Neo-adjuvant therapy, mastectomy with axillary clearance and adjuvant therapy in our patients did not produce any positive result.

CONCLUSION:

BC that is relatively rare in younger patients, occur in our environment and should be considered in the differential diagnosis of the pediatric patient with any breast mass. BC mortality in younger women is higher with poorer outcomes with late-stage disease presentation. Early detection should be our goal and efforts should be made to provide necessary genetic investigative test for screening.

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