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RISING PATTERN OF BREAST CANCER IN YOUNG WOMEN
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K. A. ADENIJI, J. M. BELLO and K. A. DUROWADE

ABSTRACT

***Objectives*: To study the rising pattern of breast cancer in young women**
***Design*: Retrospective study of cases of breast cancer from histopathological diagnosis**
***Setting*: Department of Pathology, Ilorin Teaching Hospital**
***Subjects*: Breast cancer tissues sent to histopathology department for diagnosis**
***Interventions*: Tissue fixation and processing**
***Main outcome measures*: Histopathological interpretation of Haematoxylin and Eosin (H & E) sections**
***Results*: In 15 years covered by the second study (1998-2012), 2665 breast specimens were received with 525 cases of carcinoma of the breast. Age range was 19 to 93 years with mean age of 48 years. Peak age group was 40--49 years, accounting for 143 cases (27.2%). There were 150 (28.6%) cases in women below 40 years. The first study covered 19 years (1979-1997). Breast specimens from women were 1247 and 397 were carcinoma and proportion of women below 40years was 23.7%. Age range was 19 to 90 years with an average age of 47.2 years. More cases of breast cancer were recorded among those less than 40 years in the second study compared with the first one and this was more pronounced in the age group 30-39 years. Consequently, statistically significant difference in the proportion of cases was seen between the two study groups in the age group 30-39 years. The 95% confidence interval obtained for the age group was -0.2657 to -0.0983 ($p<0.05$).**
***Conclusion*: Incidence of breast cancer is increasing, with statistically significant rise in young women. Facilities should be provided for screening, early diagnosis and management especially in the low- and middle-income countries.**

INTRODUCTION

Breast cancer is a major public health problem in high-resource regions and is emerging as public health problem in low-resource regions, as the incidence rate has been on the increase (1). This rise is even more rapid in hitherto low incidence regions such as Africa (2,3). In a study done in Ibadan in the early 1990s, incidence rate was said to have steadily increased from 15.3 per 100,000 in 1976 to 33.6 per 100,000 in 1992 (4). This increase has been attributed to increased life span, changing life styles, giving birth to less number of children, and various other factors such as exposure to carcinogens and infections (5). Breast cancer is the most common type of cancer and cause of cancer related morbidity and mortality in Nigerian women (4,5).

As there are currently no effective methods to prevent breast cancer, particularly in the low and middle income countries of the world, it is imperative to institute programmes for early detection and improved treatment to increase survival among women who develop breast cancer.

MATERIALS AND METHODS

This study is a retrospective study of cases of breast cancer diagnosed between 1998 and 2012 in the Department of Histopathology of the University of Ilorin Teaching Hospital (UITH). It is aimed

at describing the pattern of breast cancers and to determine if there is any significant change in pattern over the last 15 years compared to the first study of breast cancer in UITH which covered 1979-1997. Demographic data were obtained from the histopathology register, request cards and duplicate copies of histopathology reports. Paraffin sections were reviewed and diagnoses confirmed. Test of proportion was applied to compare the number of breast cancer cases in the two studies. Level of statistical significance was set at $p<0.05$.

RESULT

A total of 2665 breast biopsy specimens were received over the study period and breast cancer accounted for 525 (19.8%) (Table 1). Breast cancer occurred more on the left 225 (42.9%) than the right 218 (41.5%). Bilateral breast cancer was found in 1.9% of the cases. The most common histologic type of breast cancer was invasive ductal carcinoma, no special type (NST) and it accounted for 82.9%; followed by invasive lobular carcinoma (5.7%). Other histologic types are as shown in Table 1. Compared with the first study which covered 1979 to 1997, there were 310 cases of infiltrating ductal carcinoma in the first compared with a total of 435 cases seen in the second study covering 1998 to 2012. This comparison is shown in Figure 1.

Table 1
Histologic types of Breast cancer cases seen, UITH, Ilorin 1998-2012

Histologic types	Number of cases	Percentage (%)
Infiltrating ductal (NOS)	435	82.86
Infiltrating lobular	30	5.71
Intraductal carcinoma	21	4.00
Medullary carcinoma	14	2.67
Mucinous carcinoma	13	2.48
Papillary carcinoma	3	0.57
Infiltrating tubular	2	0.38
Malignant phylloides	2	0.38
Paget's disease	1	0.19
Metaplastic carcinoma	1	0.19
Fibrosarcoma	1	0.19
Adenoid cystic carcinoma	1	0.19
Poorly differentiated	1	0.19
Total	525	100.00

Figure 1
Comparison of histologic types of breast cancer in the two studies 1979-2012

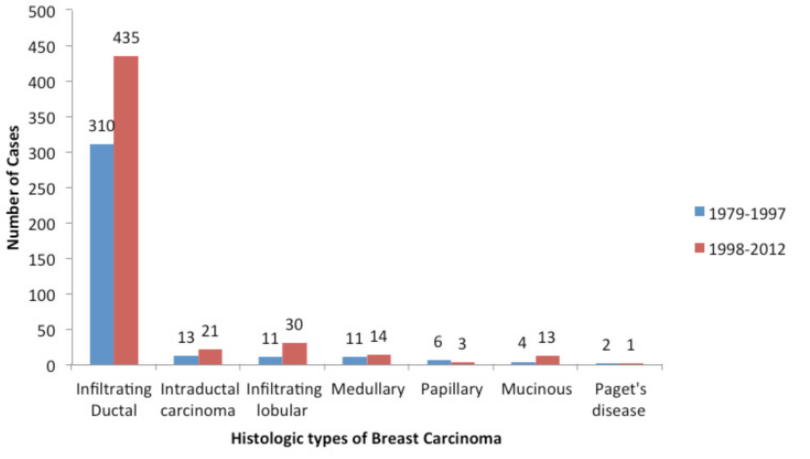

Table 2
Age-incidence of Breast cancer cases in UITH, Ilorin, 1979-2012

	1979-1997		1998-2012	
Age (years)	No of cases	Percentage (%)	No of cases	Percentage (%)
0-9	-	-	-	-
10-19	1	0.25	1	0.19
20-29	16	4.03	31	5.90
30-39	17	4.28	118	22.48
40-49	111	27.96	143	27.24
50-59	77	19.40	113	21.52
60-69	62	15.62	77	14.67
70-79	18	4.53	16	3.05
80-89	2	0.50	6	1.14
90-99	1	0.25	5	0.95
Unspecified	32	8.06	15	2.86
Total	397	100.00	525	100.00

Table 3
Comparison of Proportion of Breast Cancer by Age in UITH, Ilorin

Age group	1979-1997			1998-2012				
(yrs)	n1	(%)	P1	n2	(%)	P2	SE (p)	95%CI
0-9	-	-	-	-	-	-	-	-
10-19	1	0.25	0.0025	1	0.19	0.0019	0.0663	-0.1294-0.1306
20-29	16	4.03	0.0403	31	5.90	0.0590	0.0648	-0.1457-0.1083
30-39	17	4.28	0.0428	118	22.48	0.2248	0.0427	-0.2657--0.0983
40-49	111	27.96	0.2796	143	27.24	0.2723	0.0566	-0.1036-0.1183
50-59	77	19.40	0.1939	113	21.52	0.2152	0.0594	-0.1377-0.0951
60-69	62	15.62	0.1562	77	14.67	0.1467	0.0613	-0.1105-0.1296
70-79	18	4.53	0.0453	16	3.05	0.0305	0.0652	-0.1129-0.1426
80-89	2	0.50	0.0050	6	1.14	0.0114	0.0661	-0.1359-0.1231
90-99	1	0.25	0.0025	5	0.95	0.0095	0.0662	-1.3035-1.2895
Unspecified	32	8.06	0.0806	15	2.86	0.0286	0.0646	-0.0745-0.1785
Total	397	100.00	525	100.00				

The ages ranged between 19 and 93 years with the mean age of 48 years. The peak age group was 40–49 years (Table 2) and it accounted for 143 cases (27.2%). A total of 150 (28.6%) cases occurred in women younger than 40 years in the year 1998-2012.

Apart from the age groups 10-19 years and 70-79 years, there was a noticeable increase in the total number of cases of breast cancer seen between the two study periods. More cases of breast cancer were recorded in the 15-year study compared with the 19-year study. For instance, the age group 40-49 years had a total of 111 cases in 1979-1997 compared with a total of 143 cases recorded in the second study in 1998-2012. Similarly, the age group 30-39 years had a total of 17 cases in the first study and 118 cases in the second study, Table 3.

The 95% confidence interval obtained when the proportion of cases was compared in the 40-49 years group was -0.0181 to +0.0041($p>0.05$). This shows there was no statistically significant difference in the proportion of cases seen in the two studies. The same conclusion was obtained for all the age groups.

However, there was a statistically significant difference in the proportion of cases seen between

the two study groups in the age group 30-39 years. The 95% confidence interval obtained for the age group was -0.2657 to -0.0983 ($p<0.05$). This is shown in Table 3.

DISCUSSION

Breast cancer is a major public health problem in Nigeria and in spite of increasing awareness among the populace, it is still an important cause of morbidity and mortality (2,3). The reason for this is the late presentation and limited treatment options available in low-resource settings like Nigeria (6). This is in contrast to the situation in Europe and North America where even though breast cancer incidence is higher (1), screening and advances in the treatment of breast cancer have resulted in a sharp drop in breast cancer mortality over the past 15 years (7). In the developing parts of the world, awareness among the populace may not be absolute, as a woman may be aware of the entity called breast cancer but ignorant of the appropriate steps to take when she observes changes in her breast leading to delay in having her breast evaluated. Some do not appreciate the seriousness of their condition or that cancer treatments are available, while others believe that their symptoms are best treated with local remedies.

This study shows a steady annual rise in the frequency of breast cancer cases seen in our centre, thereby agreeing with the findings of other investigators both within and outside Nigeria about the increasing incidence of breast cancer (3,4). Occasional decline in the number of breast cancer cases occurred during periods of industrial crisis within the health sector when hospital attendance is reduce.

A total number of 525 breast cancer cases were recorded in this study over a 15-year period giving an average of 35 cases per annum. In an earlier study covering 19 years, 1979-1997 (8), 397 cases were recorded, giving an average of 21 cases per annum. This further affirmed a rise in the number of cases of breast cancer seen per year in the second study.

The mean age in this study was 48 years. This, together with the peak age range of 40-49, are similar to earlier report from this centre and those of other centres across the country (4,8,9). This supports the earlier held opinion that the disease occurs a decade earlier than in the Caucasians. However it is also possible that the disease among the elderly post-menopausal women are under reported, as the people in this age groups tend to be abandoned and patients themselves may decline going to the hospital and prefer to succumb to fate at home.

Invasive ductal carcinoma, no special type, still remains the predominant histological variant of breast cancer constituting approximately four-fifth of all breast cancer. It accounted for 82.9% in this series. This compares favorably well with several other local reports of between 78.1 and 88.2% (8,10-13). Similar trends of preponderance of this histological variant exist in other parts of the world (14). Invasive lobular carcinoma, the next common variant with 5.7% in this study agrees with 6.6% of Nggada (9) and 6.6% of Dauda *et al* (12). It is however much higher than the 2.8% observed in the previous study from this center (8).

Intraductal carcinoma constitutes 4.0% while Nggada (9) in 2008 reported 6.4% for North Eastern Nigeria and Emmanuel in South Southern Nigeria got 2.4% (11). Many other local researchers either recorded lower or none at all. This is a reflection of low level of mammographic screening for breast cancer in the country. Values of as high as 20% have been reported in the United States of America (15). The present study has shown that breast cancer in our environment is still a major public health problem as the frequency is not only on the increase, patients still present at late stages and the proportion of young women being afflicted is equally alarming. Urgent effort is therefore required to curb the rising tide of this dreaded and deadly disease. Effort should be geared towards raising the level of public awareness and government at various levels should equip hospitals for screening and early diagnosis as well as encourage manpower development.

In conclusion, more cases of breast cancer were recorded among those less than 40 years in the second study compared with the first one. This is more pronounced in the age group 30-39 years. Consequently, statistically significant difference in the proportion of cases was seen between the two study groups in the age group 30-39 years. The 95% confidence interval obtained for the age group was -0.2657to -0.0983 ($p<0.05$). This shows that the incidence of breast cancer is not only increasing, the proportion of young women affected is rising.

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