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YOUNG WOMEN WITH BREAST CANCER IN CENTRAL SUDAN; PATIENTS & TUMOR CHARACTERISTICS

*Dr. D E A TAHA, *Dr. AM Elhaj, Mr. A A Elshiekh

ABSTRACT

Among the breast cancer population in the institute of Nuclear Medicine, Molecular Biology and Oncology (INMO) in central Sudan, it was found that the incidence is more frequent among young women especially among those who are 40 years old or younger at presentation. Abnormal body mass index was found in the majority of the population of this study. Although gynaecological and obstetrical history was found to be insufficiently recorded in the patients folders, there was high percentage of women who had never conceived (38.2%) among those who have between 0-3 children (70%) which is known to be associated with increased risk for breast cancer . Family history of breast cancer among this group of patients (4.9%) is comparable to the internationally published figures. There was no specification mentioned on the histopathology report for tumour grade for 52% of the study population, for lymphovascular invasion for 85.3% of the study population, and for oestrogen receptor status for 86.3% of the study population, which made comment on the distribution of these important factors among the study group rather irrelevant although it appeared that high grade tumors is not infrequent among the study group. Also of note on this point that the quality of the histopathology report, which is almost always not containing the relevant information for treatment decisions and prognostication, is hindering good clinical practice and following the international management guidelines. Disease stages iiia, iiib, and vi comprised the majority of the stages among the study population and it clearly reflects the late presentation that this group of patients had.

* Authors have participated equally in conducting this study.

INTRODUCTION

Age is one of the most important factors that affect the incidence of breast cancer. It has been noted for many years that the incidence of breast cancer increases steadily with increasing age. It is exceedingly rare before 20. The incidence increases between 25 and 50 years of age, after which it continues to increase at a somewhat slower rate. The median age at diagnosis in the USA is 64 years. In other parts of the world, where life expectancy may be shorter, as the case in Sudan, the median age at which breast cancer develops is 10 – 15 years younger(1).

The traditionally held views indicated that the older postmenopausal women with breast cancer have a more indolent course of disease, by contrast with young patients who have a more aggressive one. However, the extensive literature on this issue is inconsistent, and the cumulative recent data

suggest that this particular patient variable is not a very important prognostic factor, particularly when other, more significant; tumor characteristics are taken into account (1).

Yet, on considering the results of many studies which have demonstrated a higher rate of local and regional relapse in pre-menopausal women treated with breast conservation treatment, particularly those under 35 years of age (2,3, 4, 5, 6), and surveying the large trial conducted by the European Organization for Research and Treatment of Cancer (EORTC), which demonstrated an increased local recurrence rate in young patients (7), it appears that, although several factors, including patient characteristics, tumor, treatment factors and age, were found which might explain the high local recurrence rate in the younger patients, age itself – together with the boost radiation dose in the EORTC trial – was the only factor that was independently related to local control.

A review of the literature reveals, by contrast, that there are authors who have reported no difference in local and regional relapse-free survival and overall survival for young patients with cancer of the breast (3, 8). Certain authors even report that old age is noted to be a negative prognostic factor (9). This indicates clearly the inconsistency of the literature about the effect of age. In addition to the above-mentioned controversy, there is still no consensus about the definition of 'young age', which varies from <30 to < 50 years.

The current study was thought to assess characteristics of the disease and patients among young women with breast cancer in central Sudan which might help better understanding of the disease among this important group of patients.

PATIENTS AND METHODS

The study addressed patients who were histologically confirmed cases of breast cancer, less than 50 years of age and presented during the period from June 2005 to June 2006 to Institute of Nuclear Medicine, Molecular Biology and Oncology, University of Gezira, Sudan. The study was a retrospective cross sectional one. Data was collected from patients' records using well designed questionnaire. The size of the sample was 102 patients. Variables collected were body mass index, age, marital status, menarche, occupation, family history of malignancy, parity, age at first pregnancy, habits and further information about tumor e.g. size, grade, lymphovascular invasion, status of surgical margins, estrogen receptor status. Data was analyzed using Statistical Package for Social Sciences (SPSS).

RESULTS

Total number of breast cancer patients during the selected period of the study was 135 patients. Data of 102 of them (75%) who were 50 years and younger at presentation was analyzed. The study indicated that 72 patients of the study population were 40 years old or younger (70.6%), most of them resident of Gezira area (77.5%), most of them are married (73.5%) and work as housewives (59.8%). Most of the study population has 0 to 3 children (70%). Those who never have children comprised 38.2% of them.

Only 17.6 % of the population used contraceptive pills. There were only 8 cases with family history of cancer (7.8%), 5 out of them reported breast cancer (4.9%). Only 42.2% of the study

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population has normal body mass index (BMI), the rest were underweight, overweight or obese (24.5%, 21.6% and 11.8% respectively). Only 2 patients gave history of smoking and one gave a history of dipping snuff (2% and 1% respectively).

Overall distribution of the stages of disease is shown in table (1) below. T3 and T 4 tumour sizes were the most reported ones (55.9%) while T2 was less frequent (36.3%) and T1 was the least (7.8%). In 52% of the study population there were no specific tumour grade mentioned on the histopathology report. Grade 3 was found in 35.3% of the study population while grade 1 and 2 were reported in 12.7% of them.

Most of the study population has no lymph node involvement (53%), while the rest have between one and more than ten lymph node involvement. Involvement of the surgical margins after surgery was reported only for 11.8% of the population while the rest have no involvement or the status have not been reported on the histopathology report (45.1% and 43.1% respectively). Lymphovascular invasion status was not reported for 85.3% of the patients, the rest have either lymphovascular invasion (5.9%) or have no invasion (8.8%).

Oestrogen receptor status was not indicated in 86.3% of the patient. Only 5.9% of the patients have positive receptors status and 7.8% have negative oestrogen receptor status.

The effect of age on distribution of tumour size at presentation has been shown in table 2. The effect of age on the status of oestrogen receptors and surgical margins could not be assessed in view of the small number of patients underwent this test.

Table 1

Distribution of stages of disease

among the study population

Stage	Frequency	Percentage
0	3	2.9
I	2	2.0
IIA	3	2.9
IIB	19	18.6
IIIA	16	15.7
IIIB	35	34.3
IIIC	2	2.0
VI	22	21.6
Total	102	100.0

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Table 2

Distribution of tumour size

Age group		Number of patients	percentage
< or = 40	< 2 cm	4	5.6
	2-5 cm	26	36.1
	> 5 cm	42	58.3
	Total	72	100.0
> 40	< 2 cm	4	13.3
	2-5 cm	11	36.7
	>5 cm	15	50.0
	Total	30	100.0

DISCUSSION:

Although there were 102 (75%) of the total number of breast cancer patients who were 50 years or younger among the breast cancer patients presented to INMO during the selected period of the study; which represent high incidence of breast cancer among young age women in central Sudan, most of them were even younger than or at 40 years of their age (70.6%). This finding about age differs from the published data from the developed countries where women are 10 times as likely to develop breast cancer in their thirties compared with women in their twenties, and 40 times as likely in their forties, 60 times as likely in their fifties, and 90 times as likely after age 60 (10) This result might be explained by the short life expectancy of the population of this part of the world which affect the age at which breast cancer occurs (Healthy life expectancy at birth m/f (years, 2002): 47.2/49.9) (11). Almost 60% of the study population work as house wives which is not indicated in the published literature to have association with breast cancer but a suspicion could be raised between living in agricultural area and having breast cancer as some recent studies have shown the incidence of hormone related organ cancers, or hormonal cancers, is elevated among farmers which is the case in this study. Exposure to endocrine disrupting pesticides, particularly DDT and phenoxy herbicide, is suspected of development in some of these hormonal cancers (12).

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Finding about marriage is expected by the fact that Sudanese women marry at an early age. From a survey done in 1999 on Safe Motherhood Survey (13), direct data on age at first marriage from that survey suggests substantially young age at marriage among Sudanese women than the ones indirectly derived from the age and marital status data. It is argued that direct estimates of age at first marriage are more reliable, although there is a trend toward later marriage among younger women especially that with junior secondary or higher level of schooling. Although gynaecological and obstetrical history was found to be insufficiently recorded in the patients folders, there was high percentage of women who had never conceived (38.2%) among those who have between 0-3 children. This fact is clearly associated with breast cancer risk among this group of patients taking in consideration that only small number of them used contraceptive pills (17.6%). Family history of breast cancer among this group of patients (4.9%) is also comparable to the internationally published figures. Abnormal body mass index was found in the majority of the population of this study.

Obesity, which is related to diet, is associated with an increase in the frequency of estrogens-related tumors, such as cancer of the uterus and breast. The relation of body weight to breast cancer is complex. An inverse association between relative weight and breast cancer risk has been found among premenopausal women in most case-control and prospective studies. Obesity may reduce breast cancer risk slightly in premenopausal women through its association with ovulatory menstrual cycles. The relationship between body weight and postmenopausal breast cancer risk is less clear. In many case-control studies, body mass index has been positively associated with postmenopausal breast cancer; however, prospective studies have generally suggested only a weak, if any, positive association (14).

Disease stages iiia, iiib, and vi comprised the majority of the stages among the study population and it clearly reflects the late presentation that this group of patients had. Also from table 2 it can be concluded that women 40 years old or younger presented with slightly more big tumour. Although a conclusion on this issue could not be reached, due to the nature of this study, this may reflect the socio-economic standards, local traditional beliefs and lack of health awareness, all of which could mean that females with breast cancer in this region present late. There was no specification mentioned on the histopathology report for tumour grade for 52% of the study population, for lymphovascular invasion for 85.3% of the study population, and for estrogen receptor status for 86.3% of the study population, which made comment on the distribution of these factors among the study group rather irrelevant although it appeared that high grade tumors is not infrequent among the study group. Also of note on this point that the quality of the histopathology report, which is almost always not containing the relevant information for treatment decisions and prognostication, is hindering good clinical practice and following the international management guidelines.

CONCLUSION

Among the breast cancer population from central Sudan, it was found that the incidence is more frequent among young women especially among those who are 40 years old or younger. Further and larger study in this area is recommended in order to verify effect of age on the incidence of breast cancer in this region. The study has also found that the patients present in advanced stages of the disease (stages iii and iv are the most common presentation). This may reflect the low awareness about the disease among women, the social circumstances, the economical factors or all of these factors together. The

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study has indicated that women with no children and those who have less than 4 comprised the majority of the study population, which goes with the internationally published data about breast cancer risk. Finally, in most cases the histopathology findings were found to be inadequately stated and it hinders good clinical practice. Meticulous reporting of the histopathology specimens is recommended.

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