

## Breast Cancer in an Ethiopian Population, Addis Ababa

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**Background:** Breast cancer is a major life-threatening public health problem of great concern. Long-term increases in the incidence of the disease are being observed in both industrialized and developing world.

**Methods:** During 1995-99, 137 biopsy proven breast cancer cases underwent surgical treatment at Tikur Anbessa Hospital, Addis Ababa. Of these cases, records of 125 were retrieved and analyzed to assess the pattern and treatment outcome of the disease.

**Results:** The median age of females was 40 years. The median duration of the presenting symptom on admission was nearly 1 year. Clinically, majority of cases had stage III disease. Invasive ductal carcinoma was the most frequent type. Eighty-nine (71.2%) patients underwent modified radical mastectomy. During a short follow-up, 50 (45.9%) of 109 patients were seen with recurrences. Only 4 cases were seen at 5 or more years.

**Conclusion:** In our series, breast cancer affected mainly young women; patients presented excessively late a probable contributor to the high rate of early relapse. Follow-up was poor. Public education on the importance of regular self breast examination to detect breast cancer should be emphasized.

### Introduction

Breast cancer is a major public health problem of great importance<sup>1</sup>. It is a stressful disease to those affected<sup>2</sup>. Worldwide, increase in the incidences of breast cancer is being observed<sup>3</sup>. The increase is considerable below the age of 50 years. After menopause, the incidence rates continue to rise, but less dramatically<sup>1</sup>. In general, in the less affluent and third world countries, the same but much lower pattern of increase with age is seen<sup>4-6</sup>. Diagnostic delays of 3-6 months are associated with advanced stage breast cancer and lower survival. Detection and treatment of cancer at an early stage improves the prospects for long-term survival<sup>7</sup>. In Ethiopia, there is no cancer registry and the incidence of the disease is unknown. The aim of this retrospective study was to analyze the pattern and treatment outcome of breast cancer in a teaching hospital.

### Patients and Methods

In the years 1995 to 1999, 137 histologically confirmed breast cancer patients underwent surgery at Tikur Anbessa Hospital (TAH), Addis Ababa. Of these, the records of 125 cases were retrieved and analyzed. TAH is a central tertiary referral hospital with adult surgical bed capacity of about 200. Information obtained from the records of patients included demographic characteristics, clinical and

pathological description of cancer, treatment and outcome. Diagnosis of metastases was based on clinical evaluation, cytohistological examination, or radiological studies. TNM<sup>8</sup> crude stage of the disease was based on information stated in patients' records.

During the years under review, TAH had no established breast cancer treatment protocol and hence decision on the type of surgical procedure was made mainly by the individual surgeon. Breast conserving therapy (BCT) with axillary node dissection, most probably due to patient preference, was offered in only 12 patients; 11 of them had stage II disease. One patient with stage IIIb disease also underwent quadrantectomy because of refusal to undergo mastectomy. Modified radical mastectomy with axillary node dissection was performed in patients with stage I and II. Toilet mastectomy was performed for mobile ulcerated fungating tumours with or without distant metastases.

Postoperatively, ipsilateral chest or axillary subcutaneous or skin nodule verified as breast carcinoma was termed as local recurrence. Data were collected on a pre format and entered into a computer. Data analysis was performed using Epi info version 6 software and relevant statistical analysis was done using the available statistical package.

## Results

The majority (55.2%) of the patients were in the 30-49 age group. Only 5% were 25 years old or below (Table 1 and Fig.1). The age for females ranged between 20 and 80 years with a mean of  $42.4 \pm 11.9$ . In males the ages ranged from 37 to 80 years with a median  $55.8 \pm 13.3$ . Out of 112 females, 13.4% and 70.5% were under the age of 30 and 50 years, respectively. Most patients were premenopausal women. The median parity was  $4 \pm 2$  but 18.1% were young nulliparous women. Majority of cases were Amhara by ethnicity and Christian.

The median duration of the presenting symptom on admission was  $11.5 \pm 19.3$  months (Table 2). Of 118 patients with documented chief complaints, 92.4% had initially painless breast lump. Breast pain without lump or nipple discharge as the main presenting feature was rare. About 50% of cases had locally advanced lesion and a quarter presented with ulcerated or fungating lesions. History of pregnancy or lactation was documented in 103 cases; 12 were pregnant or lactating at or after the detection of breast lesion and 3 became pregnant during breast cancer treatment; 8 of these had stage III disease. History of benign breast disease (6%), contralateral breast (3%) or non-breast cancer was rare. The most common signs were breast mass and axillary metastasis.

Sixty-seven (54%) patients had mobile and 20(16%) fixed ipsilateral axillary lymph nodes. The location of lesions was specified in 111 cases; 49% were in the upper outer quadrant. Sixty per cent ( $n=118$ ) of cases had tumors larger than 5 cm in diameter. Lesions fixed to the underlying muscles (34 cases), mainly the pectoral muscles, were not rare. Twelve (10%) patients had distant metastases, 6 in the lung, 5 in bone, and 4 in the liver. Clinically, majority of cases (60.2%) had stage III and IV disease, in nearly all locally advanced stage III disease. Satellite skin nodules (7%), supraclavicular (6%) or contra lateral axillary (2%) node metastases were rare. No case of Stage I disease was not recorded. Ductal invasive adenocarcinoma was the most frequently (77.6%) reported pathological type (Table 3). Other rare lesions included colloid/mucoid, comedo, papillary, or squamous cell carcinoma, lymphoma, and sarcoma (1 each). Eighty-nine patients (71.8%) underwent modified radical

mastectomy and 103, axillary dissections. In 21 patients, toilet mastectomy was performed for ulcerative/fungating tumors. Only 12 cases underwent breast-conserving surgery with axillary dissection, 9 quadrantectomy. Forty-two patients received combined or single adjuvant therapy including radiotherapy (29), chemotherapy (20), tamoxifen (19), and oophorectomy (8 patients). Out of 10 BCT cases that received adjuvant therapy only 6 had radiotherapy.

**Table 1.** Demographic features

<b>Age (Years)</b>	<b>Range:</b> 20 – 80 <b>*Mean:</b> $44 \pm 13$	
<b>M:F Ratio</b>	1:8	
<b>Ethnicity (N=115)</b>	<b>No.</b>	<b>%</b>
	Amhara	63.5
	Oromo	15.7
	Guraghe	8.7
	Tigre	7.8
<b>Religion</b>	Christians:	86.4
	Moslems:	11.8
	Others :	1.8

\* Mean  $\pm$  sd

Postoperative complications occurred in 30 patients, frequently wound collection and infection. One case, a 27-year-old female with bilateral invasive ductal carcinoma with lung, vertebral and liver metastases died in hospital following cytoreductive mastectomy, chemotherapy and radiation therapy.

Follow-up was possible in 109 cases (87.9%) for a median duration of 10 months. Of these, 58.7% had follow-up for 1 year or less, only 4 for 5 years or more. Fifty patients (45.9%) were seen with recurrences (46 females); 16 (32%) had local, 11 (22%) distant, and 21 (42%) had both local and distant recurrences. All the recurrences were following toilet (12 cases) or radical mastectomy (38 cases) with or without adjuvant therapy. The most frequent sites of recurrence or metastasis were the skin (28), ipsilateral axilla (17), lung (17) and bone (10 cases). Two (4%) died from the disease. Condition of 15 (12%) was unknown; 11 had stage IIIB or IV disease. During a mean follow-up time of 2 years, all 12 BCT cases were seen with no evidence of local or distant recurrence. Short-term clinical disease-free or improved survival was observed in cases of stage II disease regardless of age and in those that received multimodality therapy.

**Table 2.** Duration and clinical features in 125 cases of breast cancer, TAH, 1995-99

<b>Duration*</b>		17±19 (1-108) months	
<b>Main symptom (n= 118)</b>	<b>Per cent</b>	<b>Associated symptoms</b>	<b>Per cent</b>
Breast lump or mass	96.6	Nipple retraction	29.6
Breast pain without lump	2.5	Fungated/ ulcerated lesion	24.8
Nipple discharge	0.8	Nipple discharge	16.8
		Itchy nipple	5.6
<b>Signs</b>	<b>Per cent</b>	<b>Signs</b>	<b>Per cent</b>
Breast lump or mass	96.8	Lesion fixed to muscle	27.2
Lesion fixed to skin	50.4	Ulcerated/ fungating lesion	25.6
Nipple retraction	47.2	Nipple discharge	13.6
Peau d'orange skin	44.0	Axillary adenopathy	67.2
Dimpled skin	32.8		
<b>Location of breast lesion (n= 111)</b>		<b>Stage of disease (n= 123)</b>	<b>Per cent</b>
Outer quadrant	57.7	Early	39.8
Central	24.3	Advanced	60.2
Medial quadrant	18.0		

\*Overall mean ±sd (Range)

**Table 3.** Pathology, Procedure, and Complications in 125 Breast Cancer Cases, TAH, 1995-99

<b>Pathologic types</b>	<b>%</b>	<b>Procedure (n=124)</b>	<b>%</b>
Ductal invasive adenocarcinoma	77.6	Radical mastectomy	73.4
Breast carcinoma	8.0	Simple mastectomy	16.9
Invasive lobular carcinoma	6.4	Quadrantectomy	7.3
Medullary or colloid carcinoma	4.8	Lumpectomy	2.4
Inflammatory carcinoma	0.8	Axillary node dissection	82.4
Undifferentiated carcinoma	0.8	Oophorectomy	6.4
Sarcoma/lymphoma	1.6		
<b>Postoperative complication (n= 30) %</b>		<b>Condition at last visit (n= 109) %</b>	
Wound seroma	10.4	Local recurrence	14.7
Wound infection	9.6	Distant metastases	8.8
Skin necrosis/separation	2.4	Disease free survival	47.2
Pneumonia/thrombophlebitis	1.6	Dead from breast cancer	1.6
In hospital death	0.8		
Others	8.0	<b>Duration of follow-up</b>	15.8 months*

\*Mean

## Discussion

Breast cancer development increases with age, beginning to rise at approximately age 30 years<sup>2</sup>. In this study, 13.4% of cases were under 30 years of age. Most breast cancers occur during the postmenopausal years. Among Japanese women, however, no postmenopausal incidence risk occurs; it is puzzling<sup>6</sup>. In our series as well, in conformity also with other African experiences<sup>9,10</sup>, most women with breast cancer were in the premenopausal state, about 70% less than 50 years of age.

In the US, nearly 85% of women with newly diagnosed breast cancer have disease that is clinically limited to the breast or regional nodes<sup>11</sup>. In this series, the median duration of the presenting symptom at admission was 11.5 months and 60% of 118 cases had tumors larger than 5 cm in diameter, findings similar to those of African series<sup>9,10,12</sup> disclosing excessive late presentation and advanced stage of the disease. Carter et al<sup>13</sup> reported nodal metastases at diagnosis of around 40%; this was 67.2% in our series. Globally and in this series as well, in both sexes and all ages, infiltrative ductal and lobular breast carcinomas are the most common histological types accounting for 61-80% and 5-10% of cases, respectively<sup>2,14-17</sup>.

Breast carcinoma in men accounts for 0.5% of all breast cancers in the United States (18) and 2.4% to 15% in African series<sup>19</sup>, 10.4% in the present study. The reported median age of breast cancer in men varies from 56 to 59.6 years<sup>14,20</sup>, 55 years in this series.

The treatment of male and female breast cancer are similar<sup>14</sup>. Detection and excision of the primary tumor at an early stage improves the prospects for long-term survival<sup>7</sup>. In women with clinically positive axillary nodes, modified radical mastectomy and axillary dissection are excellent to achieve and maintain local control of breast cancer obviating radiation therapy<sup>2,21</sup>. For breast conserving surgery (BCT) to be successful, the tumor must be small confined to a quadrant and the patient must undergo radiotherapy<sup>11,17</sup>. Few cases underwent BCT in this series. As was also observed in 8 of 12 patients in this study, pregnant patients have more advanced stage cancer and radio- or

chemotherapy is risky before 30 weeks of gestation. Modified radical mastectomy without delay is the best option in pregnant women with stage I to III cancer<sup>22</sup>.

The primary goal of treatment of metastatic breast cancer remains palliation of symptoms and improvement of the quality of life<sup>23</sup>. Effective control of locally advanced or recurrent disease, as was routinely attempted for the former in our series, is important because uncontrolled local disease significantly impairs the quality of life causing ulcerations, bleeding, foul discharge, debilitating limb edema and pain<sup>24</sup>.

Recurrence of breast cancer is psychologically devastating indication of therapeutic failure<sup>25,26</sup>. An overall locoregional relapse rate of between 5% and 30% has been reported<sup>26</sup> with a palpable mass appreciable in 70 to 90% of cases<sup>27</sup>. Numerous surgical studies show that the risk of locoregional failure is directly proportional to the extent of axillary lymph node involvement and the size of primary tumor<sup>21,28-31</sup>. Most locoregional relapses develop in the skin of the chest, a harbinger of distant metastases<sup>23,26,28</sup>. Following axillary dissections, axillary nodal recurrences are rare<sup>29</sup>; 34% axillary relapse rate in our series was probably due to an initial advanced disease. In this study, during a short postoperative follow-up, 50 of 109 cases developed local or distant recurrences. As cited by Zavosteky and Gardner, several studies have found that 88 to 94% of recurrences are at or near the primary site<sup>32</sup>, 74% in this series.

This study is limited by its retrospective design, lack of cancer registry and the relatively small number of cases. However, it appears that breast cancer affects young age group and majority present late. General guiding principles of breast cancer therapy are early detection and aggressive local treatment to prolong survival. In healthcare facilities where timely commencement of adjuvant therapy is restricted or where the therapy is unaffordable or inaccessible, mastectomy should be the initial option. Effective control of locally advanced or recurrent disease may improve quality of life of a patient and should be attempted in selected cases.

Public awareness of the disease to identify patients with localized disease is important in

the pursuit to cure breast cancer. Patients with symptoms that could be due to breast cancer should be referred without delay for specialist assessment. To uncover the magnitude of the disease in Ethiopia and to produce national breast cancer treatment guidelines a collaborative multicenter study is desirable. Cancer registry should also be introduced.

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