Current practice in diagnosis and treatment of breast cancer in Cheicko Balbala Hospital Djibouti

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INTRODUCTION: *This report details the results of the first breast cancer (BC) prevalence study done in Djibouti, a small country in the Horn of Africa. The study was done in the Surgical Department of Balbala Hospital (also known as the Italian Hospital).*
PATIENTS AND METHODS: *102 female patients with clinical BC were evaluated between 2012 and 2017. All patients came directly to the hospital without a prior referral. Fine Needle Aspiration (FNA) was carried out on all suspected lesions representing 40.6 % of patients. A biopsy was carried out on all clinically evident lesions.*
RESULTS: *Following histopathological confirmation for all patients, 86 women (84,31%) accepted surgical procedure and clinico-histopathological staging was possible. 16 (15.69%) women refused surgery. There are no radiotherapy and chemotherapy facilities in Djibouti however hormonal therapy, Tamoxifen, is available.*
CONCLUSIONS: *The Italian Government built the Hospital in 1985 in Balbala, a District of Djibouti Ville ,with a population of over 250.000. It is an example of a successful cooperation between Italy and Djibouti in the health sector. Following a long period of assistance and support from the Italian Ministry of Foreign Affairs, the Hospital is now taken completely managed by the Ministry of Health of Djibouti . The hospital is one of the main referral hospitals in the country. Better provision of information to the local population and medical general practitioner about breast cancer would improve diagnosis, the treatment and the overall prognosis of this disease.*

KEY WORDS: Breast Cancer, Epidemiology, Surgery, Italian Balbala Hospital Djibouti

Introduction

From January 2012 to October 2017 we observed and treated 102 women with Breast Cancer.
Breast cancer is a major health problem and the most common cancer in women worldwide.
It is among the most common causes of cancer death in women in both high-resource and low-resource settings, and is responsible for over one million of the estimated ten million neoplasms diagnosed worldwide each year in both sexes [1].
It is the leading cause of cancer deaths worldwide with an estimated 1.7 million cases and 521,900 deaths in 2012. More developed countries account for half of all breast cancer cases and 38% of breast cancer deaths. Early detection and different risk factors may account for the variations in incidence internationally [4]. In 2012 the number of new cases diagnosed in women was 1.7 million (25% of all cancers), with more cases observed in the developed regions (883,000 cases against 794,000 in developing countries), while incidence rates almost quadrupled from one region to another throughout the world [2]. Breast cancer incidence in sub-Saharan Africa is among the lowest in the world. Estimated age-standardised rates in 2012 ranged from 27 cases per 100,000

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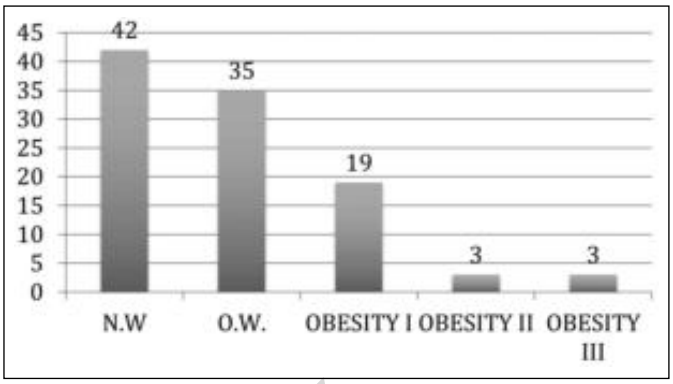
women in central Africa to 39 cases per 100,000 women in southern African regions. However mortality due to cancer is as high as in high-incidence countries; estimated age-standardised rates in 2012 ranged from 15 deaths per 100,000 women in middle Africa to 20 deaths per 100,000 women in western Africa [3]. These rates are higher than that of North America for the same year (age-standardised rate 14.8 cases per 100,000 women), which has a higher breast cancer incidence (age standardised rate 91.6 cases per 100,000 women) [6].
Over the last five years cancer of the breast has become the primary cancer in women diagnosed in our Department.
Breast cancer in the USA and Europe present at an early Stage. While breast cancer in our patients presented at an advanced Stage.
This is the first study done on breast cancer in Djibouti.



Graphic n. 1: Breast Cancer and obesity.

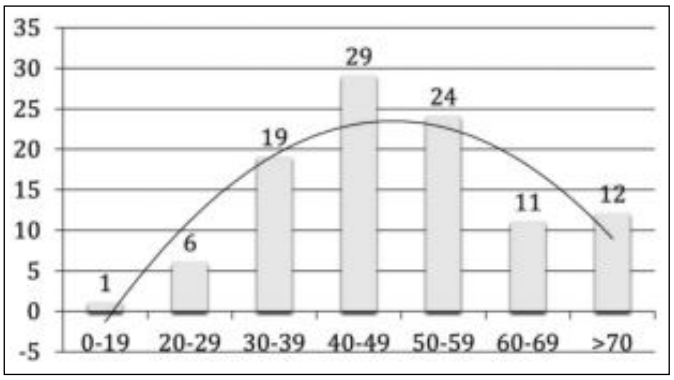
Patients and Methods

This is a prospective descriptive study of 102 patients, all female, who took part in this study from January 2012 to October 2017.
Indicators were: age, sex, gravidity and parity [21], smoke [13,14] place of birth, Body Mass Index (BMI), duration of disease [8] quadrant location of the cancer, breast feeding [15,16], contraception [11,12], family history of breast cancer and previous breast disease. There are no radiotherapy and chemotherapy facilities in Djibouti. However, hormonal therapy Tamoxifen is available. A Breast Cancer Clinic was opened in the General Surgery department four years ago. FNA was carried out on all suspected lesions and if found negative for neoplastic cells, a biopsy was done. Management consisted of surgery, Madden (modified Patey) mastectomy. Tumorectomy or quadrantectomy were not used as treatment because no adjuvant therapy is currently available.

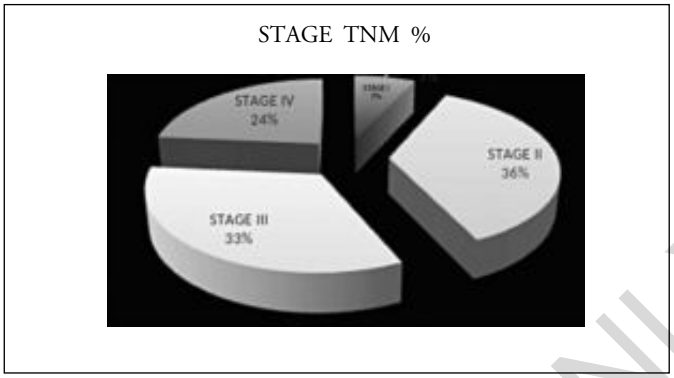
Results

A total of 102 patients of our Department took part in this study over a five-year period from January 2012 to October 2017. Breast Cancer was generally observed at an advanced stage (Figs. 1, 2, 3, 4) and overall it BC is the second most common in our Department, the most common being cancer of the oesophagus.
All patients were female. The mean age was 48, the youngest patient was 18 years old and the eldest 82. The peak age was 40-49, twenty years younger than western countries [3] (Graph 2).
22% were nulliparous 2.3% were primiparous 67% were multiparous, defined having more than three children, of these 41% were grand multiparous, defined as women who had given birth to more than seven children (Graph 4).
No protective link between BC and breast feeding and multiparty was found, 94% had breast feed in the past for an average period of more than one year.
2% of patients had a family history of breast cancer in a first degree relative.
No patient had taken Hormone replacement Therapy (HRT) or hormone replacement therapy during menopause.
None of our patients were referred by a General Practitioner (GP): patients came to us without a prior medical consultation for BC.
The right breast was involved in 63% of cases. The left breast in 36%,bilateral breast involvement 1%.
The upper external quadrant represented 69.7%.
Tumour size ranged from 1 to 15 cm.
No correlation was found about between Body Mass Index and Breast Cancer (Quatelet Index was used): 41% were normal weight, 32% overweight, 18% obesity class I, 3% obesity class II and 3% obesity class III (Graph 1).
The patients in our study presented at a late stage:
stage I - 7%; stage II - 36 %; stage III - 33%; stage IV - 24%. Advanced stages III+IV represented 57% of the total. Tumor size was from 1 to 15 cm (Graph 4).

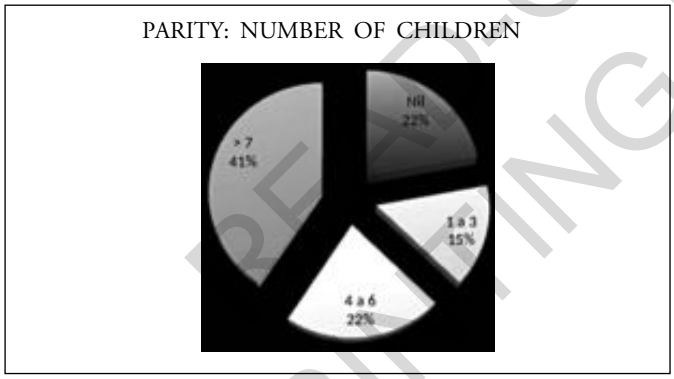
FNA cytology was done in 35 patients (40.69%) and was positive in 29 patients.
All patients underwent formal biopsy prior to surgery, while no patient accepted frozen sections.
Histopathology: our Hospital has a histopathology service run by two pathologists assisted by Pathologists Beyond Borders (APOF), an Italian non-governmental organisation, the oestrogen, progesterone receptors and HER2 were tested in 27 cases thanks to assistance from APOF.
– 90% where infiltrating ductal carcinomas;
– 5% invasive lobular carcinoma;
– 5% other (CDis-Ca undifferentiated- Cystosarcoma Phylloides.
In 27 patients, representing 27% of the total cancers treated, oestrogen and progesterone receptors along with HER2 were tested.



Graphic n. 2: Age distribution.



Graphic n. 3: Stage at presentation.



Graphic n. 4: Parity.

The results were:
– HER2 NEG: 16 cases 59% of the tested cancers
– ER POS: 15 cases 55% of the tested cancers
– PR POS: 16 cases 56% of the tested cancers
– HER2 POS: 11 cases 41% of the tested cancers

Prognostic categories based on these twenty-seven patients tested were:
LUMINAL A 34 % -8 pt- : ER+ PR+ HER2 –
LUMINAL B 26 % -6 pt- : ER+ PR+ HER2 + ER- HER2 + 8 % -2 pt- : ER - HER2+
TRIPLE NEG 32 % -7 pt- : ER- PR- HR2-

Discussion

From January 2012 to October 2017, 102 patients were diagnosed and 86 (84,3%) had surgery for breast cancer in our Surgery Unit.
The mean age was 48 years; 1% were under 20 years old, 6% were 20 to 29 years old, 18% were 30 to 39 years old, 29% were 40 to 49 years old, 23% were 50 to 59 years old, 11% were 60 to 69 years old, 12% were older than 70 years (Graph 2). In Europe (from UK data for females) age-specific incidence rates rise steeply from around age 30-34, levelling off for females in their 50s, then rising further for those aged 65-69. Rates drop slightly for females aged 70-74 and then increase steadily to plateau in the 85-89 and 90+ age groups. 53% of our patients were under 50 years old. 63% were multiparous having had more than four children and 41% of the total were grand multiparous having had more than seven children (Graph 4).
Breast-feeding in our patients was a common practice (94% of cases). The low parity associated with Breast Cancer was not seen in our study, nor were the benefits of breast-feeding [5,9].
Two of our patients (2%) had a family history of breast cancer. Testing for BRCA1 and BRCA2 mutation gene was not carried out because genetic laboratory analysis is not available Djibouti and it is very expensive to have it carried out abroad.
The majority of our patients came for consultation at a late stage, 57% were in Stage III and IV at the time of their first visit. The reasons for patients coming to the hospital at such a late stage include: lack of information and awareness about BC, lack of education, lack of knowledge about the symptoms of the disease, cultural beliefs, as well as sceptical attitude towards Western medicine and preference on traditional treatments. This data

TABLE I - *Follow up median 34 months: total 102 patients.*

STAGE I - 7 patients 7% of total (102)
– follow up 1 lost
– 5 madden mastectomy all alive 100 %
– 1 nodulectomy + sla lost at follow up

STAGE II - 37 patients – 36 % of total (102)
–33 madden mastectomy - 2 patient died mean 24 months - 31 patients alive 93%
– 4 nodulectomy - 2 patients 50% died 2 patients alive 50%

STAGE III - 34patients - 33% of total (102)
– 27 madden mastectomy – 19 patients alive 70%
– 7 nodulectomy + sla – refused madden - 3 patients alive 42%

STAGE IV – 24 patients -24% of total (102)
– all with distant metastates
– 16 no treatment – all lost at follow up
–8 cases sauvatage mastectomy to reduce pain bleeding infections – all died within
–six months

Fig. 1: Hard mass whitish and glistening.

Fig. 3: Advanced breast cancer.

Fig. 2: Enormous Breast mass.

Fig. 4: Locally destroying Breast with ulceration.

is in line with the study undertaken by Balekouzou et al [7]. We should also note the low socioeconomic level of the general population and the fact that there is not an effective national program for screening for BC to discover the disease at an earlier stage.

All patients were prescribed tamoxifen. Chemotherapy and radiotherapy are not available in Djibouti.

Family history of breast cancer was positive only in 2%. A Madden (modified Patey) mastectomy was done in 84.8% of cases.

We prefer this type of mastectomy because there are no facilities for radiotherapy in the country.
A more conservative approach could be used only once radiotherapy facilities are in place.
The patients in our study presented at a late stage: stage I - 7%, stage II - 36 %, stage III - 33%, stage IV- 24%, advanced stages III+IV represent 57% of the total (Table I).
Parity does not seem to protect from breast cancer; 41% were grand multiparous (more than seven children).

Conclusions and Recommendations

Our study shows that the peak age was 40-49 years old, twenty years younger than western countries.
No protective link between breast-feeding and multiparity was found. Many Authors consider breast-feeding a protective factor, related to hormonal changes [19-20]. No protection at all was found from breast-feeding. All our patients (except nulliparous) had breast feed in the past for an average period of more than one year.
41% of our patients had more than seven children and 61% had more than three.
No correlation was found with a high body mass index.
Prognosis in BC is dependent on the stage of the disease at presentation, our results show that of the patients with Stage I disease, who all had a Madden mastectomy were all still alive at the end of the study period while the one with a nodulectomy was lost at follow up.
For Stage II 93 % treated with a Madden mastectomy were alive while those treated with a nodulectomy + SLA only 50 % were alive.
For Stage III 70 % of patients treated with a Madden mastectomy were alive while the patients who had a nodulectomy only42 % were alive.
As for Stage IV all the patients who had no treatment were lost at follow up while the eight patients who had a saving mastectomy died within six months of the operation.
In Djibouti follow up is usually not easy for various reasons; lack of information, lack of awareness of disease, together with lack of transport and its high cost are reasons for patient non compliance. Patients tend to believe that once an operation is done, that is the end of the disease!
While for this study follow up was excellent, most probably because the patients attending our clinics were motivated and fairly well informed. During follow up we lost 17 patients representing around 17 % of the total. However when we analyse the stages we lost only one patient for stages I – II – III while for stage IV we lost 2/3 of the cases.
The mortality rate in Sub-Saharan Africa is disproportionately high compared to the incidence rate [10]. In line with Chollet-Hinton our opinion is breast cancer in young women is etiologically and biologically different from elderly women in western countries [22].
A younger age is likely a pejorative independent prognostic factor for breast cancer because the cancer in young women seems to be more aggressive because of the clinical and histopathological characteristics [23-25].
The low index of suspicion of cancer in younger patients often leads to misdiagnosis at early stage.
Much is still to be done in the field of breast cancer.
We would like to emphasise that even if only basic treatment namely surgery and hormonotherapy are available, much can be done to reduce the mortality of breast cancer while waiting for the implementation of adjuvant therapies, namely radio and chemotherapy. The objective should be to get to see patients at an early stage. This can be achieved by providing appropriate information targeted at the female population, GPs and midwives. This is a simple and inexpensive method to improve the diagnosis, the treatment and the overall prognosis of this disease.
With this study which shows that this is a common and serious disease in Djibouti we hope to raise interest in breast cancer in this geographical area.

Riassunto

Il centro sanitario periferico per la baraccopoli di Balbalà, più conosciuto da sempre come Ospedale Italiano, oggi Hopital Cheico Balbalà, è uno dei casi in cui la sanità italiana in sinergia con i chirurghi locali ha lasciato nella popolazione un segno decisamente positivo per la diagnosi ed il trattamento delle malattie neoplastiche. In questo articolo, il primo in assoluto, dedicato al Cancro alla Mammella nello Stato di Djibouti, gli Autori riportano uno studio effettuato in un periodo di cinque anni in una popolazione femminile che si è recata spontaneamente, con un fruttuoso passa-parola, per farsi visitare ed operare all'Ospedale di Balbala. Il Cancro alla Mammella è un problema che affligge il mondo intero. Lo screening in Africa Sub-Saharana è fantascienza, ostacolato dalla scarsità di risorse economiche, da diffidenze culturali, da difficoltà ambientali. Tre anni fa all'Ospedale Italiano di Balbalà è stato realizzato un Breast Cancer Unit. Rappresenta il primo passo di un difficile ma fruttuoso cammino per la diagnosi precoce ed il trattamento Oncologico del Cancro alla mammella.

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