

Epidemiological characteristics of breast cancer patients at Antanambao University Hospital in Toliara, Madagascar

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Abstract

Introduction: Breast cancer is the most common cancer among women worldwide and a leading cause of morbidity and mortality. In Madagascar, organized screening is limited, leading to late diagnosis. This study aimed to describe the epidemiological, clinical, histological, and the therapeutic characteristics of breast cancer cases diagnosed at Antanambao University Hospital in Toliara.

Methods: This retrospective, descriptive study included all women with histologically confirmed breast cancer seen at the oncology service over a 42-month period (October 1, 2016 – March 30, 2020). Data collected included socio-demographics, clinical presentation, stage at diagnosis, histology, imaging studies for staging, and treatment modalities. Data were managed using Word and Excel 2019.

Results: Among 165 histologically confirmed cancer cases, 31 were breast cancers (18.78%), second only to cervical cancer (35.75%). The mean age was 50.48 years, with the majority aged 35–55 years. Most patients were self-employed, of the Vezoethnic group, and resided in the urban commune of Toliara I. The main presenting symptom was a palpable breast mass (87%). At diagnosis, 45% were locally advanced and 29% metastatic. Invasive ductalcarcinoma accounted for 87% of cases. Staging mainly relied on chest X-ray and abdominopelvicultra sound (48%). Chemotherapy followed by surgery was the most frequently used treatment (52%), with 61% managed with curative intent.

Conclusion: Breast cancer in Toliara is predominantly diagnosed at an advanced stage. Early detection strategies, including organized screening programs and promotion of breast self-examination, are critical to improve prognosis and patient outcomes.

Keywords: breast cancer; epidemiology; screening; Madagascar

Introduction

Breast cancer arises from uncontrolled proliferation of mammary epithelial cells that escape normal differentiation and regulatory mechanisms [1]. It is the second most common cancer worldwide after lung cancer and the leading cancer among women, ahead of cervical cancer [2,3]. Its incidence is highly variable globally, with rates four to ten times higher in Western countries and a rapidly increasing burden in Africa [4]. Late diagnosis worsens prognosis, making breast cancer a leading cause of cancer-related death among women in low-resource settings [5].

This study aimed to describe the epidemiological, clinical, histological, and therapeutic characteristics of breast cancer cases diagnosed at Antanambao University Hospital in Toliara, Madagascar, to inform screening strategies and improve patient care.

Methods

This retrospective, descriptive study was conducted at the oncology department of Antanambao University Hospital in Toliara over 42 months (October 1, 2016 – March 30, 2020). All women with histologically confirmed breast cancer who were seen in gynecology consultations or hospitalized were included. Incomplete medical records were excluded.

Data collected included socio-demographic characteristics (age, residence, ethnicity, profession), clinical presentation (mode of discovery, stage at diagnosis), histological type, imaging used for staging, and treatment modalities. Data were recorded and analyzed using Microsoft Word and Excel 2019.

Results

Frequency

Of 165 histologically confirmed cancer cases, 31 were breast cancers (18.78%), ranking second after cervical cancer (35.75%).

Socio-demographic characteristics

The mean age was 50.48 years, with most patients aged 35–55 years. The majority were self-employed, of the Vezoethnic group, and lived in Toliara I (Table I).

Clinical and paraclinical findings

A palpable breast mass was the most common presenting symptom (87%). Staging mainly relied on chest X-ray and abdominal pelvic ultrasound (48%). Most patients were diagnosed at a locally advanced stage (Table II).

Histological type

Invasive ductal carcinoma accounted for 87% of cases (Table III).

Therapeutic approaches

Neoadjuvant chemotherapy followed by surgery was the most frequently used treatment (52%), followed by surgery alone. Most patients (61%) were treated with curative intent (Table IV).

Discussion

In this study, breast cancer represented 18.78% of female cancers, second only to cervical cancer. This frequency aligns with reports from sub-Saharan Africa[6,7] and the WHO in Madagascar based on 2018 data [8], but is lower than in North Africa[9] and developed

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countries [4], where breast cancer is the most common cancer among women. Differences may reflect lifestyle factors, breast feeding practices, diet, and the absence of systematic screening in low-income settings [10-13].

The mean age of 50.48 years (predominantly 35–55 years) is lower than that reported in developed countries (~61 years). This finding is consistent with the literature [14] and highlighting the need to investigate region-specific risk factors.

Most patients were self-employed or of low-to-middle income and resided near the hospital, reflecting both socio-economic disparities and the accessibility of care ; comparable to data from other studies in Sub-Saharan Africa [15,16].

Clinically, palpable breast masses dominated, consistent with late-stage presentation. These results found also in African studies highlight the importance of strengthening screening and care strategies at the continental level [17].

Staging relied primarily on chest X-ray and abdominal pelvic ultrasound due to limited access to advanced imaging such as CT, MRI, or bone scintigraphy.

Invasive ductal carcinoma was the predominant histological type, consistent with literature both in Africa and internationally in general [18-20].

Treatment was mainly neoadjuvant chemotherapy followed by surgery, although mastectomy remains the mainstay in Madagascar, with quadrantectomy or lumpectomy performed based on disease stage and resources.

Despite the study's retrospective nature, small sample size, and absence of long-term follow-up, it provides valuable insights into breast cancer characteristics in a Malagasy hospital setting.

Conclusion

Although breast cancer frequency is relatively low in Toliara, concerning features include younger age at diagnosis, advanced stage at presentation, and limited access to diagnostic and therapeutic services. These findings highlight the urgent need for awareness campaigns and

the implementation of organized screening programs to promote early detection and improve outcomes.

Table I : Distribution of patients according to socio demographic data

Socio demographic parameters	n = 31	%
Age group (years)		
[15–35[2	6
[35–55[16	52
[55–65[9	29
≥65	4	13
Occupation		
Unemployed	8	26
Self-employed	14	45
Employee	6	19
Retired	3	10
Ethnicity		
Antandroy	3	10
Mahafaly	2	6
Antanosy	2	6
Vezo	9	29
Masikoro	3	10
Tanalana	3	10
Betsileo	4	13
Merina	5	16

Socio demo graphic parameters	n = 31	%
Region of origin		
Toliara I	19	61
Toliara II	1	3
Ampanihy West	2	7
Sakaraha	5	16
Otherregions	4	13

Table II : Distribution of patients according to clinical and paraclinical data

Parameters	n = 31	%
Initial signs		
Pain	1	3
Nodule or lump	27	87
Pain + nodule	2	7
Nipple discharge	1	3
Imaging for staging		
Abdomonopel vicultra sound	3	10
Chest X-Ray and abdominopel vicultra sound	15	48
CT	2	6
Chest X-Ray, abdominopel vicultra sound and CT	11	38
Cancer stage		
Local	8	26

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Parameters	n = 31	%
Locally advanced	14	45
Meta static	9	29

Table III : Distribution of patients according to histological type

Type	n = 31	%
Invasive ductal carcinoma	27	87.1
A typical medullary carcinoma	1	3.2
Mucinouscarcinoma	1	3.2
Papillaryintracystic carcinoma	1	3.2
Invasive comedo carcinoma	1	3.2

Table IV : Distribution according to therapeutic approach

Parameters	n = 31	%
Treatment option		
Surgeryalone	9	29
Chemotherapyalone	3	10
Chemotherapy + surgery	16	52
Surgery + chemotherapy + radiotherapy	1	3
Supportive cancer care	2	6
Phase of care		
Curative	19	61

Parameters	n = 31	%
Initial palliative	10	32
Terminal palliative	0	0
Lost to follow-up	2	7

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