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Clinical and Histological Profile of Breast Cancer at University Clinics of Kinshasa, Democratic Republic of Congo

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Abstract

Context: Breast cancer represents a significant public health problem concern the world, given its frequency (20% to 25% of female cancers) and diagnosis clinical stage with a particular frequency of locally advanced cancers and inflammatory forms. **Objectives:** To describe the socio-demographic, clinical and histological characteristics of breast cancer at the University Clinics of Kinshasa. **Methods:** A descriptive and retrospective study was completed at University Clinics of Kinshasa from 1 January 2003 to 30 July 2018, including 300 cases of breast cancer diagnosed and treated. **Results:** The mean age of women at diagnosis was 47.5 ± 10.8 years. Most of the patients were married, multipara with an average parity of 3.7 ± 2.5 and non-menopausal. Breast mass was the main reason for medical visit (47.5%) and the majority of patients consulted 12 months after the onset of the disease (36.3%) at stage 3 (56%) and node extension was observed in 61.3%. The average size of the breast mass was 8.02 ± 3.7 cm. The infiltrating ductal carcinoma was the most common histological type in 82.5% of cases; the majority of tumors were histo-pronostic II in 47.5% of cases. 83% of the tumors were hormonal-dependent. Only 35.9% of the tumors over-expressed the HER 2/Neu receptor. **Conclusion:** Most patients consulted more than 12 months after the onset of the disease and the diagnosis was made at advanced stages. The tumor was large at diagnosis. The left breast was the most affected. The majority of tumors are of high histopronostic grade and are hormonal-dependent.

Keywords

Breast Cancer, Clinical and Histological Profile, University Clinics of Kinshasa

1. Introduction

Cancer is a scourge affecting countries around the world [1]. In high-income countries, cancer is one of the leading causes of morbidity and mortality; it is the second leading cause of death and is responsible of almost a quarter of deceases. In developing countries, cancer accounts for one in 20 deaths; however, the incidence of cancer in these countries is trending upwards [2] [3].

Breast cancer is a major public health problem concern world, given its frequency (20% to 25% of female cancers) and clinical stage to diagnosis with a particular frequency of locally advanced cancers and inflammatory forms [4].

It is the second most common cancer in the world (after lung cancer), affecting 1.7 million people in 2012, accounting for 11.9% of all cancers and the most frequently diagnosed cancer in women. Breast cancer is also the leading cause of death in women [5]. In many developed countries, reducing mortality from this cancer is a major public health challenge [6] [7]. Breast cancer has a favorable long-term prognosis, especially if it is diagnosed and managed earlier. The breast cancer survival rates on five-year vary widely across countries, ranging from 80% or more in North America, Sweden, and Japan to nearly 60% in middle-income countries and less than 40% in low-income countries [8].

The incidence of breast cancer varies according to many factors, including geographic region, ethnicity, lifestyle, and socioeconomic status [6] [7]. Each year, 50.000 new cases of breast cancer were diagnosed in France [9].

In most developing countries, this cancer is ranked second among women's cancers after cervical cancer with ever-increasing incidence and mortality [7] [10]. It is estimated that one in 9 women will develop breast cancer during her lifetime [11]. In high-income countries, numerous studies have observed a decrease in breast cancer mortality of around 25% - 30% thanks to systematic screening that has led to early diagnosis, but also to enormous therapeutic progress available [12] [13].

Early diagnosis remains an important strategy for detecting disease at early stages, especially in low- and middle-income countries where diseases are usually diagnosed at advanced stages and where resources are very lacking. The management of a locally advanced breast cancer represents a real challenge, since at this stage the extensive tumors are inoperable immediately and the metastatic risk is very high. In poor or intermediate countries the late discovery of breast cancer exposes the patient to more mutilating, longer, more expensive, less bearable treatment with lower chances of cure [7]. In addition to surgery, it will often be necessary to resort to chemotherapy, radiotherapy, hormone therapy, immunotherapy, palliative treatment, and psychotherapy [7]. In these developing countries, patients, who are generally poor, are often admitted in advanced stages of the disease [14] [15] [16], sometimes excluding any attempt of surgery.

Given the above-mentioned features, it seemed appropriate to carry out the present study, with the aim of describing the epidemiological, clinical and pathological profile of breast cancer at the University Clinics of Kinshasa.

2. Methods

This descriptive and retrospective study conducted at UCK from 1 July 2003 to 1 July 2018 included all records of patients who had histologically confirmed breast cancer. Data were collected by review of medical records from the oncology unit. All records of patients treated for breast cancer at University Clinics of Kinshasa during study period were included. Files containing less than 50% of the variables studied were excluded from this study. A total of 204 files were found to be eligible for the study.

The variables collected were related to sociodemographic parameters (age, parity, marital status, menopausal status), clinical parameters (age at menarche, history of cancer, complaints at admission, clinical stage, size of tumor, macroscopic appearance of the lesion, the affected breast, node invasion), paraclinical parameters (histological type, histopronostic grade, hormone receptors, HER2/neu status, immunohistochemistry class). Data were collected anonymously and confidentially processed, with access only granted to the research team.

Data analysis

Data have been verified, entered in Microsoft Office Excel 2003, then exported to SPSS (Statistical Package for Social Sciences) 21.0 for statistical analysis. The results were presented within tables: qualitative variables were expressed as proportions and quantitative variables averaged with their standard deviations.

3. Results

At the end of this study, we recorded a total of 300 breast cancer cases. Only 204 files were considered eligible for the study and were described below. With regard to socio-demographic characteristics, the average age of women with breast cancer was 47.50 ± 10.75 years old with extremes of 19 to 83 years, the majority having an elderly 43 to 50 years (29.4%). Most patients were married, multipara with an average parity of 4 ± 2 and non-menopausal (Table 1).

According to the clinical characteristics, it is obvious from Table 2 that a breast mass was the main reason for consultation (47.5%), most of the patients had no history of cancer (89.7%), and consulted twelve months, after the onset of the disease (36.3%). The average age of menarche was 13.2 ± 1.7 years.

The majority of patients was found at stage 3 (56%) and lymph node extension was observed in 61.3% predominantly axillary in 72.8% of cases. The average size of lymphadenopathy was 2.2 ± 0.9 cm with extremes of 1 to 5 cm. The average size of the tumor was 8.02 ± 3.7 cm with extremities of 1 to 20 cm in diameter. Dimpling was the main macroscopic skin lesion in 32.8% of cases. 14.7% of patients had a normal-looking breast. The left breast and the superexternal quadrant were the most affected in 56.9% and 25% respectively (Table 3).

From Table 4, we see that infiltrating ductal carcinoma was most frequent histological type in 82.4% of cases, the majority of tumors were of histoprognostic grade II in 47.5% of cases. 83.1% of tumors were hormone-dependent. Only 35.9% of tumors that overexpressed HER 2/Neu. The Luminal A immunohistochemical type was the most represented in 45.3% of cases.

Table 1. Sociodemographic characteristics.

Characteristics	Effective (n = 204)	%
Age (years)		
19 - 26	2	1
27 - 34	27	13.2
35 - 42	55	27
43 - 50	**60**	**29.4**
51 - 58	37	18.1
59 - 66	18	8.8
67 - 74	2	1
75 - 82	1	5
83 - 90	2	1
Parity		
Nullipara	16	7.8
Primipara	21	10.3
Multipara	**167**	**81.9**
Marital status		
Single	95	46.6
Married	109	53.4
Menopausal status		
Yes	74	36.3
No	130	63.7

Table 2. Distribution of patients according to anamnestic characteristics.

Characteristics	Effective (n = 204)	%
Reason for consultation		
Mass	97	47.5
Diffuse swelling	24	11.8
Breast pain	42	20.6
Nipple retraction	4	2
Blood flow	11	5.4
Breast ulceration	11	8.3
Other	9	0.4
History of cancer		
Yes	21	10.3
No	183	89.7

Continued

Lead time before consultation (months)		
1 - 3	41	20.1
4 - 6	33	16.2
7 - 12	56	27.4
More than 12	74	36.3

Table 3. Characteristics of the tumor.

Characteristics	Fréquence	%
Clinical stages		
1	4	2
2	27	13.2
3	106	56
4	66	32.8
Location of lymphadenopathy		
Axillary	91	72.8
Supra clavicular	18	14.4
Subclavicular	16	12.8
Macroscopic aspect of the lesion		
Skin dimpling	67	32.84
Skin dimpling + ulceration	14	6.86
Skin dimpling + upper limb lymphedema	24	11.77
Bloody/purulent discharge	6	2.94
Ulceration + scaling	9	4.41
Necrosis + Growth or cauliflower	23	11.28
Breast retraction	11	5.39
Normal appearance of the breast	30	14.71
Unspecified	20	9.8
Affected breast		
Right	82	40.2
Left	116	56.9
Bilateral	6	2.9
Relevant quadrant		
upper outer quadrant	51	25
upper inner quadrant	32	15.7
lower inner quadrant	18	8.8

Continued

lower outer quadrant	27	13.2
Astride the nipple	1	0.5
Whole breast	36	17.6
Unspecified	37	19.1

Table 4. Histological and immunohistochemical characteristics.

Characteristics	Fréquence (n = 240)	%
Histological types		
Ductal carcinoma	168	82.4
Lobular carcinoma	18	8.8
Medullary carcinoma	7	3.4
Papillary carcinoma	2	0.98
Intraductal carcinoma	1	0.5
Malignant phyllodes tumor	8	3.2
Histoprognostic grade		
I	62	30.4
II	97	47.5
III	45	22.1
Hormone receptors		
Positives	44	83.1
Negatives	9	16.9
Her 2 /neu Status		
Positive	19	35.9
negative	34	64.1
Immunohistochemistry result		
Luminal A	24	45.3
Luminal B	15	28.3
Triple negative	6	11.3
HER 2/neu	8	15.1

4. Discussion

The average age at diagnosis was 47.50 ± 10.75 years, similar value to that reported by several African authors including Ben Ahmed in Tunisia in 2002 [4] who found an average age of 50 years, Sando *et al.* in Cameroon [17] found an average age of onset at 52 years. This is different from what is encountered in high-income countries, where cancer mainly affects women after menopause [18].

Our study reveals that breast cancer increases with parity. Multiparas were the most affected with a frequency of 48.5%. Most African authors [4] [19] [20] have made the same observation. Menopause represented 36.3% of cases. This result is far lower than that noted by Wail *et al.* [21] which was 68.7%, and Ben Ahmed *et al.* [4] who noted 46.8% of menopausal patients.

The late diagnosis of cancers remains of significant concern in our environment. Indeed, an average 10 months passed before a woman consults for complaints related to breast cancer. This delay is higher than those reported by Ben Ahmed *et al.* [4] which was 6.5 months. For Sofia Aloulou *et al.* in 2015 in Morocco [22] this delay was 8.47 months and for Dem Ahmadou in Senegal [23] 8.2 months but our delay is far superior to that of the INCA in France in 2012 [24] which found 17.7 ± 15.9 days and that of the Francim Network [25] which was 15.2 ± 22.7 days over the entire period 1999-2008. This delay is close to that of Essiben [19] which was 9.2 ± 3 months. Richards [26] showed, in a meta-analysis of 87 studies, that patients for whom this delay was greater than 3 months had a survival rate 12% lower than that of women treated more quickly. By comparing data of the clinical examination of our series with that of the studies carried out in Western countries, we note a very low rate 17.2% of tumors diagnosed early. Locally advanced forms (stages III and IV) represent more than half of the cases (88.8%). Ben Ahmed *et al.* [4] made the same observation. Sando in Cameroon in 2014 [17] reported that 76.4% of breast cancers were recognized at stages T3 and T4 and 73.6% had palpable axillary lymph node. Lygia *et al.* in Angola in 2012 [27] noted a high representativeness of 95% of cases and Essiben in Cameroon [19], Mbala Nl, 2010 [14], Durbard *et al.* [28] reported 78.5% respectively; 95.4%; 30% of cases arriving at an advanced local clinical stage. There are several reasons for late diagnosis, mostly financial problems, first-line recourse to traditional medicine, the absence of an operational national breast cancer screening program in the DRC and women's lack of awareness on early detection of breast disease.

In our study, invasive ductal carcinoma of breast was the most encountered histological type in 82.4% of cases. The other invasive forms were scarcely found. The predominance of ductal carcinomas is consistent with data in the literature [4] [17] [19] [23] [27] [29]. The percentage of grade III tumor of Scarff, Bloom and Richardson at diagnosis is very low and represents 22.1%, while grade II tumors are the most frequent with 47.5%. Our results corroborate those of Sando in Cameroon in 2014 [17] which found 23.6%; 69.4% and 7% respectively for grade I, II, III. Dalenc F *et al.* 2010 [30] in France showed that SBR grades 1 and 2 were overall equivalent (45% and 41%) with a low percentage of SBR 3 grade (9%). Immunohistochemical analyse allowed us to conclude that 83.1% of tumors were rich in hormone receptors and 16.9% overexpressed Her2/neu protein. Dalenc F *et al.* [30] in France also noted a very large majority of HR+ tumors. Abbass *et al.* [31] noted in their series that 72% of tumors were positive for hormone receptors. Concerning overexpression of Her-2/neu protein, our study reports a rate of 35.85%. This result is higher than that observed by Mbala

Nl. *et al.* [14] or 10%. And also higher than that of Dalenc *et al.* [30] who found 5.2% of cases and that of Diéras *et al.* in France in 2013 [32] who found 16% of cases of HER2+ disease. Abbass *et al.* [31] reported 26%. Blaizel *et al.* [33] in Canada noted in their series 18.3%.

The data about management, outcome and follow up of the patients were not including in our stufy. It's were the limitations of our study.

5. Conclusion

Most patients consult more than twelve months after the onset of the disease and the diagnosis is made at an advanced stage. The tumor was large at diagnosis. The left breast was the most affected and the upper outer quadrant. The majority of tumors are of high histoprognostic grade and are hormone-dependent.

Author's Contributions

MBG and MMA were principal investigators, participated in generating and designing the study and were actively involved in data collection and statistical analysis. They drafted the first manuscript. MBA, LAJ, MNF, OMJ, KNB, NOC, LBJ, ELS, OLE and KMG participated in designing the study, data collecting and analyzing the results. All authors contributed in preparing the final manuscript.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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