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Epidemiological Clinical and Histological Aspects of Gynecological and Breast Cancer in Pointe Noire (Congo Brazzaville)

Christian F. S. Ngatali[1*], A. Bolenga Liboko[2], Y. Mabiala[2], D. Moukassa[3], J. B. Nkoua-Mbon[2]

[1]Department of Oncology and Internal Medicine, Loandjili General Hospital, Pointe-Noire, Republic of the Congo
[2]Medical Oncology Department, Teaching Hospital of Brazzaville, Brazzaville, Republic of the Congo
[3]Hospital General Edith Lucie Bongo, Oyo, Republic of the Congo
Email: *christianngatali2003@yahoo.fr

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Abstract

INTRODUCTION: The objective of our study was to determine the epidemiological clinical and histological aspects of gynecological and breast cancers in Pointe-Noire. **PATIENTS AND METHODS:** This was a retrospective descriptive study that took place in the cancerology and internal medicine department during the period from January 1, 2012 to December 31, 2021, *i.e.* a period of 10 years. Women with histological diagnosis of gynecological and breast cancers were included in our study. The variables studied were: frequency, age, alcohol and tobacco consumption, histological type, stage of extension, location of cancer. Bivariate analysis was done between age and location of the tumour. The statistical test used was the KHI2 test. The results were statistically significant for a value of $p < 5\%$. **RESULTS:** We collected 400 files from women with cancer. Among the 400 files, 265 were represented by gynecological and breast cancers, that is a frequency of 65.43%. Among the 265 cases of gynecological and breast cancer identified during this study period, breast cancer represented the first rank with 52% frequency. Cervical cancer accounted for 41% followed by ovarian cancer (5%) and endometrial (2%). Cancer of vulva was represented by a single case. The average age of patients with gynecological and breast cancers during our study was 52 ± 12 years. The average age of patients with cancer of the breast, cervix, ovarian, endometrial was respectively 49 ± 11.97 years, 54.73 ± 12.91 years old, 50 ± 14 years, 67 ± 14.24 years, the age of the vulva cancer patient was 51 years old. The histological type of breast cancer was represented by infiltrating ductal adenocarcinoma in 91% of cases, invasive lobular carcinoma in 7% and sarcoma in 2%. Cervical cancers were represented by squamous cell carcinomas in 95% of cases and adenocarcinomas in 5% of cases. Vulva cancer was

represented by squamous cell carcinoma, ovarian cancer was represented by epithelial tumors (adenocarcinoma) in 100% of cases. Endometrial cancers were represented by endometrial adenocarcinoma. All cancers were diagnosed at advanced stages (locoregional and metastatic stage). Patients over the age of 50 had more gynecological and breast cancers; but this result was not significant. **CONCLUSION:** Gynecological and breast cancers are frequent and constitute the first cancer of Congolese women in Pointe-Noire. Breast cancer is the first cancer followed by cancer of the cervix and ovaries. The histological types are those of the literature. Patients with gynecological and breast cancers consult at very advanced stages.

Keywords

Gynecological, Breast, Cancer, Epidemiological, Clinical, Histological, Aspects, Pointe Noire, Congo Brazzaville

1. Introduction

Cancer ranks as a leading cause of death and an important barrier to increasing life expectancy in every country of the world [1]. According to estimates from the World Health Organization (WHO) in 2019 [2] cancer is the first or second leading cause of death before the age of 70 years in 112 of 183 countries and ranks third or fourth in a further 23 countries.

Breast cancer has now surpassed lung cancer as the leading cause of global cancer incidence in 2020, with an estimated 2.3 million new cases, representing 11.7% of all cancer cases. It is the fifth leading cause of cancer mortality worldwide, with 685,000 deaths. Among women, breast cancer accounts for 1 in 4 cancers cases and for 1 in 6 cancers deaths, ranking first for incidence in the vast majority of countries (159 of 185 countries) and for mortality in 110 countries. There are exceptions, most notably in terms of deaths, with the disease preceded by lung cancer in Australia/New Zealand, Northern Europe, Northern America, and China (part of Eastern Asia) and by cervical cancer in many countries in sub-Saharan Africa [3].

Cervical cancer is the fourth most frequently diagnosed cancer and the fourth leading cause of cancer death in women, with an estimated 604,000 new cases and 342,000 deaths worldwide in 2020. Cervical cancer is the most commonly diagnosed cancer in 23 countries and is the leading cause of cancer death in 36 countries, with the vast majority of these countries found in sub-Saharan Africa, Melanesia, South America, and South-Eastern Asia [3].

Gynecological cancers represent 19% of cancers worldwide. In Africa, the most common cancers are breast and cervical cancer [4].

Several studies on gynecological and breast cancers have been carried out worldwide [5] and in Africa [6] [7] [8].

In Congo, apart from the study carried out by Nsonde *et al.* [9], no other

study has been carried out in Pointe-Noire. This is how our study aimed to determine the epidemiological, clinical and histological aspects of gynecological and breast cancers in Pointe-Noire in Congo Brazzaville.

2. Patients and Methods

This was a retrospective descriptive study that took place in the cancerology and internal medicine department during the period from January 1, 2012 to December 31, 2021, *i.e.* a period of 10 years. Were included in our study: women with histological diagnosis of gynecological and breast cancer and an extension assessment made of a thoraco-abdominal CT scan and/or a chest X-ray and an abdominal ultrasound. Patients with secondary gynecological and breast cancer were excluded.

The data was collected from the records of patients hospitalized in the cancer service during the study period using a survey sheet established beforehand.

The variables studied were: age, tobacco and alcohol consumption, stage of extension, histological type, location of the cancer.

Bivariate analysis was done between age and location of cancer.

The stage of extension was grouped in local (stage 0 and I), locoregional or advanced (stage II and III) and metastatic (stage IV) for breast cancer.

For cervical cancer staging was made by the FIGO (international Federation of Gynecology and obstetrics) staging 2018 which was grouped in local (stage IA, IB and II), locoregional or advanced (stage IIB, III and IVA) and metastatic for stage IVB.

For endometrial, ovarian and vulvar cancer, staging was also grouped into local stage (stage I), locoregional stage (stage II and III), metastatic stage (stage IV)

Data entry was done using the Excel version 2016 software. Qualitative variables were represented in terms of number and percentage. Quantitative variables were represented effective and on average. The statistical analysis and the data processing were carried out by the Excel 2016 software and the graphpad prism version 7 software. The statistical test used was the chi-square test.

3. Results

We collected 400 files from women with cancer. Among the 400 files, 265 were represented by gynecological and breast cancers, that is a frequency of 65.43%. The average age of patients with gynecological and breast cancers during our study was 52 ± 12 years. The most represented age groups were those from 44 to 53 years old with 30%, from 34 to 43 years old (23%), and from 54 to 63 years old (22%) (**Table 1**). 2 patients consumed tobacco (**Table 2**). 148 (55%) of the patients consumed alcohol (**Table 3**).

The average age and extremes of patients with breast cancer, cervix cancer, ovarian cancer, endometrial cancer were respectively 49 ± 11.97 years (extreme 28 years and 75 years), 54.73 ± 12.91 years old, (extreme 24 years and 96 years), 50 ± 14 years (extreme 28 years and 75 years), 67 ± 14.24 years (extreme 53 years

and 87 years). We observed a single 51-year-old patient who presented with vulvar cancer.

Table 1. Distribution of patients according to age group.

Age Group	Numbers	Percentage
24 - 33	18	7
34 - 43	62	23
44 - 53	80	30
54 - 63	58	22
64 - 73	31	12
74 - 83	13	5
84 - 93	2	1
94 - 103	1	0
Total	265	100

Table 2. Distribution of patients according to tobacco consumption.

	Tobacco		
Age Groups	**No**	**Yes**	**Total**
24 - 33	16	2	18
34 - 43	62	0	62
44 - 53	80	0	80
54 - 63	58	0	58
64 - 73	31	0	31
74 - 83	13	0	13
84 - 93	2	0	2
94 - 103	1	0	1
Total	**263**	**2**	**265**

Table 3. Distribution of patients according to consumption of alcohol.

	Alcohol		
Age Groups	**No**	**Yes**	**Total**
24 - 33	9	9	18
34 - 43	28	34	62
44 - 53	31	49	80
54 - 63	27	31	58
64 - 73	13	18	31
74 - 83	6	7	13
84 - 93	2	0	2
94 - 103	1	0	1
Total	**117**	**148**	**265**

Among the 265 cases of gynecological and breast cancer identified during this study period, breast cancer represented the first rank with 52% frequency. Cervical cancer accounted for 41% followed by ovarian cancer 5% and endometrial cancer 2%, vulvar cancer accounted for only 1 case (Table 4). The average age of patients with cancer of the breast, cervix, ovaries, endometrium were respectively 49 ± 11.97 years, 54.73 ± 12.91 years old , 50 ± 14 years old, 67 ± 14.24 years old, the age of the patient with cancer of vulva was 51 years old. The histological type of breast cancer was represented by infiltrating ductal adenocarcinoma in 91% of cases, invasive lobular carcinoma 7% and sarcoma 2% (Figure 1). Cancers of the cervix were represented by squamous cell carcinoma in 95% of cases and adenocarcinomas in 5% of cases (Figure 2). Vulva cancer was represented by squamous cell carcinoma, ovarian cancer was represented by epithelial tumors (adenocarcinoma) in 100% of cases. Endometrial cancers were represented by endometrial adenocarcinoma. The most represented stage of extension of patients with breast cancer was locoregional stage in 48%, metastatic stage of extension was represented in 24% of cases, the local stage was represented in 28% of cases (Table 5). The most represented stage of extension of patients with breast cancer was locoregional stage in 49%, metastatic stage of extension was represented in 24% of cases, the local stage was represented in 27% of cases Table 6. Patients over the age of 50 had more gynecological and breast cancers; but this result was not significant (Table 7).

Table 4. Distribution of patients according to location.

Location	Number	Percentage
Breast	138	52
Cervix	109	41
Ovary	13	5
Endometrial	4	2
Vulva	1	0
Total	**265**	100

Table 5. Distribution according to the stage of extension for breast cancer.

Stage of extension	Number	Percentage
Local	37	27
Locoregional	68	49
Metastatic	33	24
Total	138	100

Table 6. Distribution of patients according to stage of extension for cervix cancer.

Stage of Extension	Number	Percentage
Local	31	28
Locoreginal	52	48
Metastatic	26	24
Total	109	100

Table 7. Distribution of patients according to location of cancer and age group.

Age group	Cervix	Endometrial	Ovary	Breast	Vulva	Total
<50	40	1	2	66	0	109
≥50	69	3	11	72	1	156
Total	**109**	**4**	**13**	**138**	**1**	**265**

P > 5% Significant result.

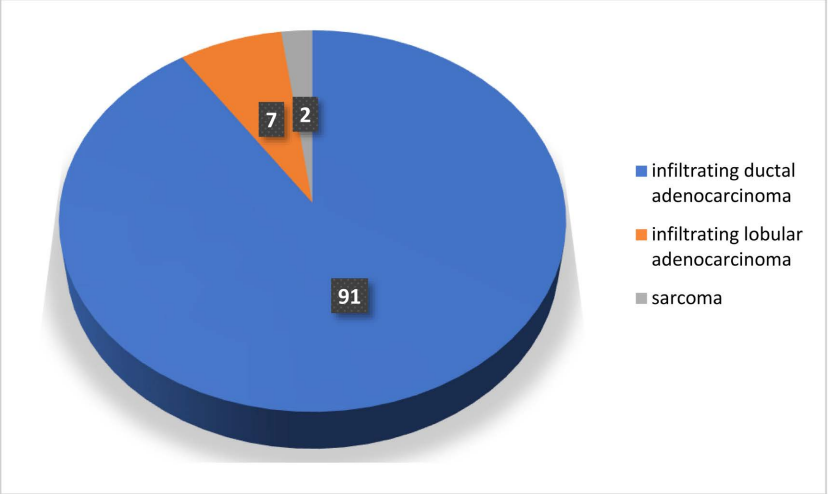

Figure 1. Histological type of breast cancer.

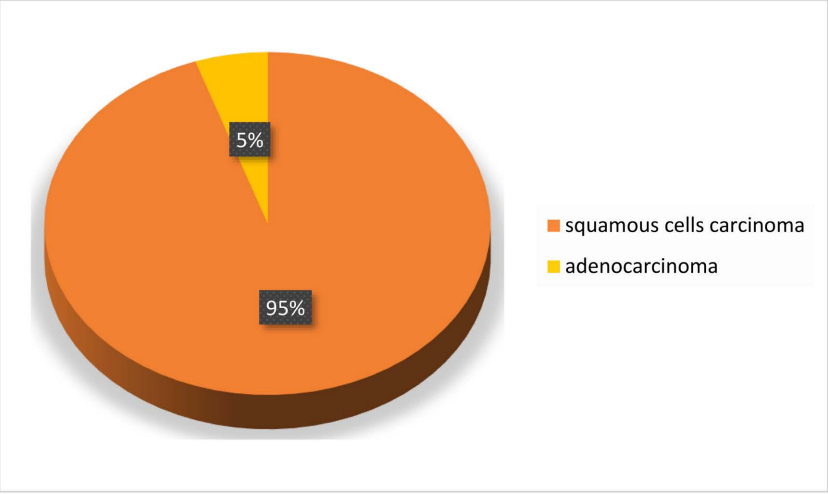

Figure 2. Histological type of cervix cancer.

4. Discussion

4.1. Frequency, Age, Risk Factors

The frequency of gynecological and breast cancers in our study was a frequency of 65.43%. This relative frequency is particularly high, thus reflecting the first place of gynecological and breast cancers among women's cancers in the Congolese context. The first preponderance of gynecological and breast cancer cases

was found in the literature [10] [11].

The average age of patients with gynecological and breast cancers during our study was 52 ± 12 years. This age is superimposable with that of several studies in the literature [6] [11]; the age group most affected being that of 44 to 53 years.

2 out of 265 patients have used tobacco. Tobacco is a risk factor for several cancers [12].

More than half of the patients in our study had consumed alcohol. Bagnardi *et al.* examined the relationship between alcohol consumption and 23 cancer types using a meta-analysis, and found increased risk for oral, pharyngeal, esophageal, colorectal, laryngeal, and breast cancers as consumption increased [13].

4.2. Breast Cancer

Breast cancer was the first gynecological and breast cancer in our study with a proportion of 52% followed by cervical cancer 41%. Breast cancer remains the most common cancer in women in the majority of countries [3] [14] and gynecological and breast cancers |11].

The average age of patients with breast cancer in our study was breast 49 ± 11.97 years extreme 28 years and 75 years. this average age of the patients in our study was found by most authors in Africa with averages of 47.5 ± 12.36; 47.97 respectively described by Ngowa J. *et al.* [15], Cameroon and Mensah *et al.* Ghana [16]. On the other hand, in developed countries in the USA, for example, the average age of breast cancer patients was 61 years with the extremes of 55 years and 64 years [17]. In Saudi Arabia the average age found was also relatively young 47.16 ± 12.15 [18]. As is the case in sub-Saharan Africa where these 2 cancers represent 45.4% of new cases of female cancer each year [14].

Breast cancer is the most prevalent female cancer worldwide in both developed and developing countries. It represents 23% of cancers in women and 10.9% of all human cancers in the world [14]. Regarding the clinical presentation, the major difference concerns the stage at the time of diagnosis with cancers at early stages in rich countries and advanced tumors in low-income countries. In our study, the majority of patients were seen in advanced stages II and III (locoregional) with a percentage of 49% and metastatic or 24% of cases, the local stages accounted for 27% of cases in our study. Several studies in the developing countries have similar results to those of our study [19]. This could be explained on the one hand by a primary level of study in our study thus generating a weak knowledge of the cancer pathology and the clinical signs of beginning; on the other hand, the socioeconomic level may be considered as a barrier to consultation since access to a health center and cancer treatment remains very expensive [20] [21].

This delay in diagnosis is the consequence of the shortcomings of a very limited health system in financial, material and human resources and of the low level of knowledge of women vis-à-vis breast cancer. The implementation of a screening program would improve the prognosis of breast cancer patients. The

most common histological type was infiltrating ductal adenocarcinoma with a frequency of 70%. These results have been observed in the literature [22].

4.3. Cervix Cancer

IN our study, cervical cancer was the second gynecological and breast cancer with a frequency of 41%. In urban areas in Cameroon, cervical cancer represented 11% to 31.74% [14] [23] [24] of female cancers two decades ago and 40.18% [10] gynecological and breast cancers 10 years ago. But contrary to our study, cervical cancer was the first gynecological and breast cancer in Cameroon indeed Recent preliminary work carried out in semi-urban areas found 57% of cervical cancers among gynecological cancers [7] [25].

The average age of patients with cervical cancer in our study was 49 ± 11.97 years with extremes 28 years and 75 years. These results are superimposable to those of the literature, whose average age varies between 46 to 53 years reported by previous local and foreign series in both rich and poor countries [14] [23] [24]

The histological type is most represented by squamous cell carcinoma in 95% of cases in our study. This predominance of squamous was also the same in literature [26] [27] [28].

The most represented stage of extension in our study was locoregional or advanced stage in 70% of cases. This was also found in literature [29].

This could be explained by the lack of knowledge about cervical cancer due to the primary level study in our study and the lack of policies about cancer prevention in general and particularly in cervical cancer.

We observed advanced stage in our study this is explained by the long delay between the appearance of symptoms and the lake use of care and the absence of a national policy for screening and vaccination. Indeed, surveys have shown that the knowledge, attitudes and practices of Cameroonian women and health personnel with regard to the HPV virus (Human Papilloma Virus) and cervical cancer are low [26] [30] [31].

Screening by visual inspection after application of acetic acid is limited to a few referral hospitals, yet it is now the method of choice in poor countries [32] [33]. Due to its prohibitive cost and low awareness rate, HPV vaccination is not yet widely used in Congo.

4.4. Ovarian Cancer

In our study, ovarian cancer was the third gynecological and breast cancer with a proportion of 5%, or 13 cases out of 265.

The average age at diagnosis in our study was 50 ± 14 years with extremes 28 years and 75 years. This average age is consistent with data from the literature.

The diagnosis was late with 16 cases out of 31 (51.61%) at FIGO IV stages.

In sub-Saharan Africa, ovarian cancer is the sixth cancer in women and the third cancer of the reproductive system after breast and cervix in sub-Saharan Africa [14] [34].

The peak incidence of ovarian cancer diagnosis in developed countries occurs between the ages of 65 and 74; the difference with our series could be explained by the composition of the Congolese population which is relatively young.

4.5. Endometrial Cancer

Endometrial cancer was the fourth gynecological and breast cancer in our study with a proportion of 2%. This is close to figures reported in developing countries [24] [35].

Endometrial cancer is the most frequent cancer of female genital cancers and the diagnosis is most often made at ages [36] [37].

Adenocarcinoma was the most common histological type, accounting for 100% of cases. This corroborates the data of the literature [38].

4.6. Cancers of the Vulva and Vagina

Cancer of the vulva accounted for 1 case and that of cases. These two cancers are ubiquitous with little difference in incidence between regions, vulvar cancer representing 5% of gynecological cancers. Their incidence peaks are between 60 and 70 years [39],

The only patient with vulvar cancer was 51 years old which was in agreement with the literature [7] the histological type was squamous cell carcinoma being in agreement with the literature

Patients aged over 50 had more gynecological and breast cancers, but this result was not significant. This could be explained by the sample size or the type of study chosen here in our study, which is a cross-sectional study. Aging is considered among the most significant risk factors for cancer [40].

The strong positive association of aging with cancer is widely believed to reflect generalized declines in cellular and molecular system functions as an endogenous risk. Aging encompasses at least nine recently proposed hallmarks [41].

5. Conclusion

Gynecological and mammary cancers are frequent and constitute the first cancer of Congolese women in Pointe-Noire. Breast cancer is the first gynecological and mammary cancer followed by cancer of the cervix and ovaries. The histological types are those of the literature. Patients with gynecological and breast cancers consult at very advanced stages. Knowledge of the epidemiology of these cancers is necessary for the implementation of prevention and management programs well suited to our context with limited resources.

Conflicts of Interest

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

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