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## Gynaecological Cancers in the University of Calabar Teaching Hospital, Calabar, Nigeria: A Six Year Review

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### Abstract:

*Background: Gynaecological cancers are a major cause of cancer-related mortality with varying prevalence in different parts of the world.*

*Aim: To determine the distribution and relative frequencies of gynaecological cancers in the University of Calabar Teaching Hospital (UCTH), Calabar.*

*Materials and methods: This was a retrospective descriptive study of gynaecological cancers in UCTH. Records of patients admitted with gynaecological cancers from the 1<sup>st</sup> January 2013 to 31<sup>st</sup> December 2018 were retrieved from the medical records department. Data obtained were entered into Microsoft Excel spreadsheet and analysed using STATA-16.*

*Results: A total of 272 gynaecological malignancies out of 2916 women admitted during the six-year-study period giving a prevalence rate of 9.33%. Cervical cancer was the most prevalent with 157(57.7%), followed by Ovarian 57(21%) and endometrial 15(14.7%), while Vulvar, vaginal and choriocarcinoma were less prevalent. The mean age incidence 52.9±12.0 years. Parity was significantly associated with the type of the tumour (p-value <0.001) Ovarian cancers were more prevalent in nulliparous women or those with low parity (0-1) while cervical cancer was more prevalent in those with parity more than 4. Majority 236(86.8%) were indigenes of South-south. Notwithstanding, Cervical cancer was still the most prevalent in all tribal groups.*

*Conclusion: Gynaecological cancers especially cervical cancer, remain a recalcitrant and prevalent problem affecting women at the prime of their lives. Collective collaboration of individuals, government and public is required for improved sensitization, awareness, and screening of women for premalignant lesions and early detection and treatment for reduction in its prevalence.*

**Keywords:** Gynaecological cancer, screening, awareness creation

### 1. Introduction

Globally, malignant gynaecological tumours are a major cause of cancer-related mortality with varying distribution in different parts of the world.<sup>1</sup> They could be divided into two distinct groups based on aetiology. The first group consists of: cervical, vaginal and vulvar cancers which begin as premalignant lesions and advance to invasive cancer, having strong association with oncogenic human papilloma virus, while the second group comprises ovarian, fallopian tube and uterine corpus cancers and do not have associated infective aetiology.<sup>2</sup>

In developing countries, gynaecology remains a recalcitrant problem to the gynaecologist and poses enormous financial and psychological burden to the patient and their families.<sup>3</sup> It is responsible for 25% of all de-novo cancers in women up to their sixth decade of life compared to 16% of cases in the western world.<sup>2</sup> In Nigeria, there has been documented incidence of 10.1 and 8.4 percent in Enugu and Abakaliki respectively (south-Eastern region), 11.7% and

23% in Kano and Maiduguri (Northern Nigeria) respectively, 4.18% and 12.78% in port- Harcourt and Calabar (southern Nigeria) respectively, while Ghana reported 2.8% and 0.32% in Asia.<sup>1,3-6</sup>

Cervical cancer which is preventable has been documented as the most prevalent type of gynaecological cancer from several studies in Nigeria, compared to lower incidence in developed countries which has been attributed to better health-seeking behaviour with widespread routine screening and treatment of premalignant conditions which is still rudimentary in resource poor sub-Saharan regions.<sup>1,2,7</sup> On the contrary, endometrial and ovarian cancers exist more in developed countries<sup>2</sup> with ovarian cancer responsible for majority of gynaecology related deaths<sup>1,4</sup> and the most common of female genital tract cancers in the united kingdom.<sup>1</sup> Vaginal (<2%), vulvar cancers(3%) and choriocarcinoma (0.6%) are less common.<sup>2,5</sup>

Age has been strongly associated with the occurrence of gynaecological cancers and the peak age incidence varies among different types of cancers.<sup>1</sup> However, majority of women affected are usually in their fifth decade of life.<sup>5</sup> Several studies have shown strong evidence of an association between parity and gynaecological cancers with a higher incidence of cervical malignancies in women of higher parity while the occurrence of endometrial and ovarian cancer have been associated with lower parity.<sup>8</sup>

The prevalence of gynaecological cancers in Nigeria is still enormous with cervical cancer contributing immensely to the high prevalence rate despite increasing awareness and availability of conventional screening modalities for premalignant cervical lesions in most health facilities.<sup>9</sup> Studies carried out previously to x-ray the pattern and frequencies of gynaecological malignancies in UCTH were between 1996-2005.<sup>5</sup> This study is aimed at reviewing the recent distribution and relative frequencies of malignant gynaecological tumours admitted in UCTH, Calabar-a major referral hospital in the region and will go a long way to impact on cancer awareness and screening, clinical protocols, health-care planning and resource allocation for better prevention and management of cancers in the centre and region at large.

## 2. Materials and Methods

This study was carried out in the University of Calabar Teaching Hospital (UCTH) Calabar. It is a major referral hospital in Cross River State and the South-South region of Nigeria for oncology cases in gynaecology. This is made possible by the presence of the oncology unit in the department. This was a retrospective data analysis of gynaecological malignancies between 1<sup>st</sup> January 2013 and 31<sup>st</sup> December 2018. The records of patients admitted for gynaecological malignancies were retrieved from the medical records department, theatre register and wards.

Data obtained were entered into Microsoft Excel and was analyzed using STATA-16. Quantitative variables were described using mean and standard deviation and were summarized in frequency tables and graphs. The categorical variables were expressed in simple percentages and frequencies. Chi-square was used to test significance between proportions and a p-value of  $\leq 0.05$  was considered statistically significant.

## 3. Results

A total of 2916 women were admitted into the gynaecological ward during the six-year-study period. Two hundred and seventy-two (272) women had gynaecological malignancies giving a prevalence rate of 9.33%. Six different gynaecological cancers were seen in this study. Cervical cancer was the most prevalent accounting for 157(57.7%). One fifth of the cancers were ovarian 57(21%) followed by endometrial 43(15.8%). Vaginal cancers and Choriocarcinoma were the least prevalent (<1%) each as shown in Table 1.

Women affected were in the third to eighth decade of life (23-80 years) with an overall mean age of  $52.9 \pm 12.0$  years. The age group of 41 – 70 years accounted for 75% of the gynaecological cancers with 51 – 60 years being the highest 93(34.2%), those thirty years or less were the least 7(2.6%). Majority of women with gynaecological cancers were multiparous with overall median parity of 4 (3-5). Para 2-4 were the highest 138(50.7%) followed by para 4 or more 103(37.9%) while nullipara was 14(5.1%). Most of the women admitted were from the southern region of Nigeria 236(86.8%) followed by neighbouring eastern region 31(11.4%), while the northern and western regions were sporadic one percent or less in this study (Table 2).

Majority of women with cervical and endometrial cancers were between the fourth to sixth decade of life and less prevalent in women less than 30 or up to 80 years of age. The mean age of women who had cervical cancer ( $54.11 \pm 10.67$  years) was similar to endometrial ( $55.20 \pm 12.27$ ), far higher than choriocarcinoma ( $34.00 \pm 0.00$ ), ovarian cancers ( $48.68 \pm 13.68$ ) but lower than Vaginal cancer ( $63.00 \pm 16.97$ ), but this was not statistically significant (P-value= 0.143). The median parity for patients with cervical (4:3-6) and endometrial cancer (4:3-5) were higher than those with ovarian cancer (2:1-4), vaginal (3:2-4), vulva (3:2-5.5), and choriocarcinoma (2:2-2). This association was statistically significant ( $\chi^2 = 57.57$ , P-value <0.001). Ten nulliparous women had ovarian cancers, only two had cervical cancer, two endometrial cancers while none had choriocarcinoma, vulva and vaginal cancers.

However, cervical cancer still accounted for majority of gynaecological cancers in non-southern women followed by endometrial (8 cases), ovarian (5 cases), vulva (2 cases) cancers found in women from eastern Nigeria, respectively. The association was statistically significant (P-value<0.001).

Type of Cancer	Frequency (n=)	Percentage (%)
Cervix (Cx)	157	57.7
Ovary (O)	57	21.0
Endometrium (E)	43	15.8
Vulva (VU)	12	4.4
Vagina (Vg)	2	0.7
Choriocarcinoma (Ch)	1	0.4
<b>Total</b>	<b>272</b>	<b>100</b>

Table 1: Frequency of Different Gynaecological Malignancies in the Study Group

Characteristics	Number	Percentage	
<b>Age group (years)</b>			
≤ 30	7	2.6	Mean Age: 52.9± 12.0.
31-40	35	12.8	
41-50	53	19.5	
51-60	93	34.2	
61-70	59	21.7	
71-80	22	8.1	
> 80	3	1.1	
<b>Parity</b>			
0	14	5.1	Median parity: 4(3-5)
1	17	6.3	
2-4	138	50.7	
>4	103	37.9	
<b>Region</b>			
East	31	11.4	
North	2	0.7	
South	236	86.8	
West	3	1.1	
<b>Total</b>	<b>272</b>	<b>100</b>	

Table 2: Sociodemographic of Women with Gynaecological Cancers

Characteristics	Tumour Site						Total	χ <sup>2</sup>	P-value
	Cx (%)	E (%)	Ch. (%)	O (%)	Vg (%)	Vu (%)			
<b>Age group (years)</b>									
<30	1(14.3)	2(28.6)	0(0.0)	4(57.1)	0(0.0)	0(0.0)	7(100.0)		
30-39	16(45.7)	3(8.6)	1(2.9)	12(34.3)	0(0.0)	3(8.6)	35(100.0)		
40-49	32(60.4)	7(13.2)	0(0.0)	11(20.8)	0(0.0)	3(5.7)	53(100.0)		
50-59	58(62.4)	15(16.2)	0(0.0)	17(18.3)	1(1.1)	2(2.2)	93(100.0)		
60-69	36(61.0)	11(18.7)	0(0.0)	10(17.0)	0(0.0)	2(3.4)	59(100.0)		
70-79	13(59.1)	4(18.2)	0(0.0)	2(9.1)	1(4.6)	2(9.1)	22(100.0)		
≥80	1(33.3)	1(33.3)	0(0.0)	1(33.3)	0(0.0)	0(0.0)	3(100.0)	45.08	0.143*
Mean Age:	54.1±10.7	55.2±12.3	34.0±0	48.7±13.7	63.0±17	51.2±13.1	52.9± 12.0.		
<b>Parity</b>									
0	2(14.3)	2(14.2)	0(0.0)	10(71.4)	0(0.0)	0(0.0)	14(100.0)		
1	3(17.7)	3(17.7)	0(0.0)	10(58.8)	0(0.0)	1(5.9)	17(100.0)		
2-4	78(56.5)	25(18.2)	1(0.7)	25(18.1)	2(1.5)	7(5.1)	138(100.0)		
>4	74(71.8)	13(12.6)	0(0.0)	12(11.7)	0(0.0)	4(3.9)	103(100.0)		
Median parity:	4(3-6)	4(3-5)	2(2-2)	2(1-4)	3(2-4)	3(2-5)	4(3-5)	57.57	<0.001*
<b>Location</b>									
East	16 (51.6)	8(25.8)	0(0.0)	5(16.1)	0(0.0)	2(6.5)	31(100)		
North	2(100.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	2(100)		
South	137(58.1)	35(14.9)	1(0.4)	52(22.0)	1(0.4)	10(4.2)	236(100)	50.98	<0.001*
West	2(66.7)	0(0.0)	0(0.0)	0(0.0)	1(33.3)	0(0.0)	3(100)		

f- fishers exact \* statistically significant P -Value.

Table 3: Association of Gynaecological Cancers with Age, Parity, and Geographical Location

4. Discussion

In this study, almost one tenth of admissions into the gynaecological ward was attributed to gynaecological cancers. This is lower than 12.78% obtained in a previous study in Calabar reported by Omotoso, et al<sup>5</sup> and 11.7% in Kano<sup>10</sup> but higher than Abakaliki(8.4%)<sup>1</sup>, Jos(5.4%) and Ghana(2.8%).<sup>5</sup> Cervical cancer contributed to over half of cases admitted into the gynaecological unit and is in keeping with several other studies in the country and sub-Saharan African regions.<sup>3,5,11</sup> This high incidence has been attributed to the paucity of screening modalities for premalignant cervical

lesions and widespread vaccination against human papillomavirus in the region, which on the contrary are readily available in the developed countries and has led to a drastic reduction of cervical cancer incidence by more than half in the last three decades.<sup>9,12</sup>

Ovarian Cancer was the second most common gynaecological cancer in this study as well as in several other studies<sup>13</sup> occurring in one fifth of cases. This was at variance with previous study done by Omotoso et al in Calabar, where it was the third most prevalent after endometrial cancer.<sup>5</sup> However similar studies in Nigeria report similar prevalence in Kano, Enugu, Imo and Abakaliki.<sup>1,10,11,14</sup> Ovarian cancers were more prevalent in those of lower parity which is in keeping with the 'incessant ovulation theory'.<sup>13</sup> Women with higher parity as well as regions with early marriages and good breast feeding practices have been reported to have low incidence of ovarian cancers.<sup>1,13</sup> The mean age of women was  $48.7 \pm 13.7$  years and was similar to that reported in Lagos and Enugu reported by Okunade et al ( $45.7 \pm 4.3$  years) and Nwankwo et al ( $46.7 \pm 11.3$ ).<sup>5,13,15</sup>

Malignant endometrial neoplasms were seen in over one tenth of cases and were the third most common malignancy in the oncology unit. Okunowo AA et al in Lagos also reported comparable prevalence rate and median parity. However, the mean age was higher.<sup>16</sup>

Vulvar, myometrial and vaginal cancers were less frequent. This was in keeping with several other studies where cancers of these locations were rarely seen.<sup>17-20</sup> Although only one case of choriocarcinoma was seen within this study period in a 34 year old multiparous woman, a study done in Western Nigeria found it to be the second most common gynaecological malignancy.<sup>4</sup>

The location of the Hospital in South- South Nigeria with neighbouring eastern (Igbo) states may have resulted in the high admission of women from the locality followed by the Eastern indigenes, while northern and Western tribes were quite sparse. However, the design of this study does not reflect the prevalence of the malignancies in these different regions. Therefore, multi-centred studies within the country may be required for further analysis of tribal variations and relative frequencies of gynaecological cancers. Nevertheless, cervical cancer was still top on the list amongst all tribal groups.

It was also deduced from the study that majority of affected women were at the prime of their lives- fourth to sixth decade, in keeping with Omotoso et al as well as other studies.<sup>5</sup> a very little fraction of women less than thirty years of age were affected. It is therefore pertinent that women at risk of gynaecological cancers be sensitized, counselled, and screened before the age of thirty years. They should be encouraged to have regular follow up visits afterwards for early detection of premalignant conditions and early stage of cancers to reduce the occurrence of cancers, improve the management outcome and preserve the gynaecological health of our women in the future.

#### 4.1. Conclusion

Gynaecological cancers remain a prevalent public health problem, affecting majority of women at the prime of their lives and requires collective collaboration of the government, community, health facilities and individuals to enhance sensitization, awareness, and screening of women especially for premalignant conditions of cervix in order to further reduce its prevalence and preserve the health of our women.

#### 5. Recommendations

- There is need for the need for government policies and resource allocation for intense community sensitization and routine screening of the populace within and outside the hospital environment. Screening that is accessible, and affordable with regular follow up visits for early detection and prompt management.
- Specialized regional oncology centres should be established in every geo-political region of the country, equipped with skilled manpower and infrastructure for the management of gynaecological malignancies and most importantly, strengthening cancer awareness and screening for premalignant lesions.
- Multi-centre studies within the country may be required for further analysis of variations and relative frequencies of gynaecological cancers in the different regions.

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