

# Pattern and relative frequencies of gynecological malignancies at the University of Abuja Teaching Hospital, Abuja

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## ABSTRACT

**Background:** Gynecological cancers have been shown to contribute overwhelmingly to gynecological mortality worldwide, particularly in developing countries. An in-depth study of the patterns of the distribution will help to elucidate the estimates of the disease burden in University of Abuja Teaching Hospital (UATH).

**Objectives:** The aim of this study was to determine the pattern and relative frequencies of gynecological cancers at UATH.

**Materials and Methods:** Case notes of patients managed for gynecological cancers at UATH over a 5-year period from January 1, 2014 to December 31, 2018 were retrieved. Relevant data on age, parity, and type of cancer, clinical, surgical, and histopathological diagnosis were collated using a proforma and analyzed using Statistical Package for the Social Sciences (SPSS).

**Result:** A total of 167 gynecological cancer cases of 3030 gynecological admissions were seen during the period putting its prevalence at 5.5%. The most common gynecologic cancer was cervical cancer that constituted (88) 52.7% of the cases; ovarian 47 (28.1%), endometrial 17 (10.2%), choriocarcinoma 11 (6.6%), and vulva cancers 4 (2.40%) are not so common. The mean age and parity at presentation are cervical cancer ( $55.50 \pm 12.71$  and  $4.41 \pm 2.05$ ), ovary ( $42.34 \pm 14.91$  and  $2.94 \pm 2.11$ ), uterus ( $50.54 \pm 15.18$  and  $3.39 \pm 2.25$ ), and vulva ( $63.50 \pm 15.09$  and  $5.50 \pm 2.38$ ), respectively. The overall mean age for all cancers is  $51.16 \pm 14.95$  and overall parity is  $3.85 \pm 2.21$ . Majority presented in advanced stage of the disease; the most common cause of death is renal failure.

**Conclusion:** The burden of gynecological cancers is high, although cervical cancer is on downward trend in our environment and most cancer cases came as late presentations.

**Key words:** Abuja; cervical cancer; choriocarcinoma; gynecological cancers; ovarian cancer.

## Introduction

Genital tract malignancies are among the leading causes of cancer-related deaths globally and it is responsible for approximately 10% of all malignancies in women.<sup>[1]</sup> These cancers are seen worldwide but their patterns and frequencies of distributions vary from one place to another.<sup>[2]</sup>

It accounted for 25% of all new cancers diagnosed in women aged up to 65 years compared with 16% in the developed world according to a global report shown by the International

Agency for Research on Cancer.<sup>[3]</sup> Likewise, developing countries accounted for 820,265 cases (77.7%) of global estimates for new cases of the most common gynecological cancers, including cervical, corpus, and ovarian cancers,

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in 2009. This is based on a report on the global burden of cancer.<sup>[3]</sup> Ovarian and endometrial cancers occur later in reproductive life, whereas carcinoma of the cervix and choriocarcinoma are seen commonly in premenopausal or perimenopausal women. Age and parity are known to affect the incidence of gynecological cancers.

Cervical cancer is the most common pelvic malignancy among women worldwide.<sup>[1,2,4-8]</sup>

There has been a dramatic decline in the incidence and mortality associated with cervical cancer over the past 5 decades in advanced countries due the introduction of routine advanced screening. However, in low-resource countries like ours, the incidence of cervical cancer is still high and a major cause of death among women is due to lack of awareness and the crude method of cervical screening.<sup>[1,3,6]</sup> In Nigeria, it accounts for 74.4% of female genital tract cancers in Benin City, 73.2% in Ibadan, 73.1% in Ilorin, and 73.6% in Port Harcourt.<sup>[7]</sup>

Ovarian malignancy is a second major cause of death from female genital tract malignancies.<sup>[5]</sup> Patients with ovarian cancer present with advanced stages of the disease in 75% of the cases due to nonspecific symptoms.<sup>[1,7]</sup> and there is no standard screening technique for early diagnosis of ovarian cancer.<sup>[1,7]</sup> Ovarian cancer diagnosis still poses a great challenge because of the intraabdominal disadvantaged position of the ovary<sup>[7]</sup> and its highest case fatality rate among gynecological cancers worldwide is due partly to its late presentation.<sup>[9]</sup> A study conducted in Ibadan, Nigeria revealed that it represents 16.3% of the genital tract cancers.<sup>[1]</sup> Globally, there are more than 200,000 new cases of ovarian cancer diagnosed with approximately 6.6 new cases per 100,000 women annually.<sup>[9]</sup> Greater awareness of symptoms potentially associated with ovarian cancer might lead to earlier diagnosis, which might improve survival.

Currently, endometrial cancer is the most common genital tract malignancy in North America and Western Europe.<sup>[10]</sup> It is probably the third most common malignant tumor of the genital tract in sub-Saharan Africa and accounted for 4%–11% of all genital tract cancers in a recent study conducted in Nigeria.<sup>[10]</sup> They are more common among postmenopausal women and vaginal bleeding with or without discharge appeared to be the common presentation.<sup>[10,11]</sup>

On the contrary, vulva cancer is a rare disease accounting for 3%–5% of gynecological cancers worldwide and remains an important disease affecting sexuality. It accounted for 2.1% of all gynecological malignancies in an earlier study conducted

in Ghana and over 80% of cases occur in women more than 55 years of age.<sup>[12]</sup> It is primarily a disease of elderly women, occurring in women over 60 years of age but has been observed in premenopausal women as well.<sup>[13]</sup>

Choriocarcinoma is a malignant variant of gestational trophoblastic disease with a highly aggressive biologic behavior and sensitive to chemotherapy.<sup>[14,15]</sup> It constitutes approximately 0.6% of all cancers of the female reproductive system.<sup>[6]</sup> In 2002, there were approximately 5800 cases reported worldwide, the vast majority occurring in less developed regions. In the USA, the incidence is 1 in 40,000 pregnancies, whereas it is 0.80 and 0.87 per 1000 deliveries in Ghana and Nigeria, respectively.<sup>[15]</sup>

Despite such a frequency and incidence, there is paucity of knowledge and data regarding this dreadful condition. This study aimed at evaluating the relative frequencies and pattern of female genital tract malignancies in Abuja, Nigeria.

### Study population

The study population comprised all the patients who had gynecological cancer at University of Abuja Teaching Hospital (UATH) during the study period.

### Inclusion criteria

The inclusion criteria of the study were all patients with complete available data/variable of interest within the study period.

### Exclusion criteria

The exclusion criteria of the study were patients whose data or variable of interest was not complete during data collection and those without histological diagnoses.

### Study period

The study was commenced after obtaining approval for the proposal from the institution health research ethics committee. The study period was from January 1, 2014 to December 31, 2018.

### Materials and Methods

This was a retrospective descriptive study of patients admitted for gynecological cancers at UATH, Abuja. The case notes of patients admitted for gynecological cancers over a 5-year period from January 1, 2014 to December 31, 2018 were retrieved. Relevant data on age, parity, and type of cancer, clinical, surgical and histopathological diagnosis were collated using a proforma. The cases of choriocarcinoma were diagnosed based on clinical features and confirmed by biochemical test. The data obtained were analyzed

using Statistical Package for the Social Sciences (SPSS) software program, version 22.0 (IBM Corp., Armonk N.Y., USA). Absolute numbers and simple percentages were used to describe categorical variables. Similarly, quantitative variables were described using measures of central tendency (mean, median) and measures of dispersion (range, standard deviation) as appropriate.

### Results

The peak age of occurrence of all cancers was marginally between 46 and 60 years (32.3%), whereas 74.4% of the cancer cases occurred among the women of high parity [Table 1].

The mean age for cervical carcinoma patients (55.50 ± 12.71 years) was higher than that of uterine cancer (50.54 ± 15.18 years) and ovarian (42.34 ± 14.91 years) but lower than vulva cancer (63.50 ± 15.09) and the mean parity for cervical cancer (4.41 ± 2.05) was higher than those of uterine cancer (3.39 ± 2.25) and ovarian (2.94 ± 2.11) [Table 2].

The most common site for genital malignancy was on the cervix (52.7%), followed by ovarian cancer (28.1%), endometrial cancer (10.2%), choriocarcinoma (6.6%) and the least was vulva cancer (2.4%) [Table 3]. No case of vagina cancer was seen within the period.

The peak incidence for cervical cancers was between 31 and 45 years of age; both uterine and ovarian cancers plateauing at ages between 46 and 60 years and vulva cancer peaking at ages between 61 and 75 years [Table 4].

Majority (60.5%) of the gynecological cancer cases presented at advanced stages of the disease [Table 5] and the most common cause of death amongst cancer patients was renal failure.

Trend of prevalence of gynecological cancers in the study population [Figure 1] showed the initial sudden rise in prevalence rate of cervical cancer and reaching its peak in the year 2016 and a sharp decline, reaching lowest in 2018 and falling rate of ovarian cancer, slight fall in endometrial cancer, whereas vulva and choriocarcinoma did not significant change within this period.

The peak age of occurrence of all cancers was between 46 and 60 years (32.3%), followed by ages between 31 and 24 years (29.9%), whereas majority Para 5 and above (48.7%) and Paras 3–4 (25.7%) of the cancer cases occurred among the women of high parity.

The mean age for cervical carcinoma patients (55.50 ± 12.71 years) was higher than that of uterine

**Table 1: Age range and parity distribution of the patients with the various cancers**

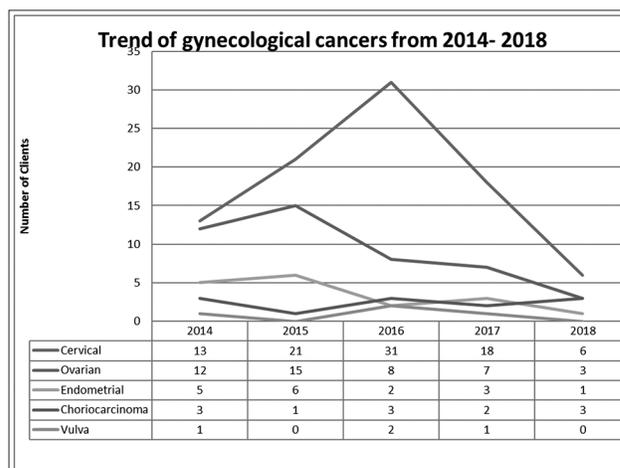
	Frequency	Percent
<b>Age</b>		
15-30	17	10.2
31-45	50	29.9
46-60	54	32.3
61-75	44	26.3
76-90	2	1.2
Total	167	100.0
<b>Parity</b>		
0	21	12.6
1-2	25	15.0
3-4	43	25.7
>=5	78	46.7
Total	167	100.0

**Table 2: Sites of malignancies with mean age and mean parity of the distribution**

Site of malignancy	Mean age±SD	Mean parity±SD
Cervix	55.50±12.71	4.41±2.05
Uterus	50.54±15.18	3.39±2.25
Ovary	42.34±14.91	2.94±2.11
Vulva	63.50±15.09	5.50±2.38
Overall mean	51.16±14.95	3.85±2.21

**Table 3: Site and frequency of distribution of female genital cancer**

Site of Tumor	No. of cases	Percent	
Cervix	88	52.7	
Uterus	Endometrial	17	10.2
	Choriocarcinoma	11	6.6
Ovary	47	28.1	
Vulva	4	2.4	
Total	167	100.0	



**Figure 1: Trend of prevalent rate from 2014 to 2018s**

cancer (50.54 ± 15.18 years) and ovarian (42.34 ± 14.91 years) but lower than vulva cancer (63.50 ± 15.09). The mean parity

**Table 4: Age distribution according to site of malignancy**

Site	Age				
	15-30	31-45	46-60	61-75	76-90
Cervix	0	31	28	27	2
Uterus	4	6	10	8	0
Ovary	13	12	16	6	0
Vulva	0	1	0	3	0
Total	17	50	54	44	2

**Table 5: Stage at presentation**

Stage	Frequency	Percent
1	24	14.4
2	42	25.1
3	72	43.1
4	29	17.4
Total	167	100.0

The table shows that the majority of the gynecological cancer cases presented at advanced stages of the disease; 60.5% (between stages III and IV)

for cervical cancer ( $4.41 \pm 2.05$ ) was higher than those of uterine cancer ( $3.39 \pm 2.25$ ) and ovarian ( $2.94 \pm 2.11$ ), but lower than the vulva cancer ( $5.50 \pm 2.38$ ).

In Table 3, most (52.7%) had cervical cancer, followed by ovarian cancer (28.1%), endometrial cancer (10.2%), choriocarcinoma (6.6%), and the least was vulva cancer (2.4%).

Trend of prevalence of gynecological cancers in the study population [Figure 1] showed the initial sudden rise in prevalence rate of cervical cancer and reaching its peak in 2016 and a sharp decline in 2018, falling rate of ovarian cancer, slight fall in endometrial cancer, whereas vulva and choriocarcinoma did not significant change within this period.

## Discussion

In this study, gynecological cancers constituted 5.5% of all the gynecological admissions within the period. This is less than 8.4% and 10.7% documented by Agboeze *et al.*<sup>[1]</sup> and Yakasai *et al.*,<sup>[7]</sup> respectively. The peak age of occurrence of all cancers was marginally between 46 and 60 years (32.3%) with overall mean age of  $51.16 \pm 14.95$  years. This finding is comparable with mean age of  $54.6 \pm 14.2$  years documented elsewhere.<sup>[4]</sup>

The most common site for genital malignancy was on the cervix (52.7%). This finding of cervical cancer being the most common gynecological cancer is consistent with studies conducted in other places<sup>[3,5,16]</sup> and comparable to work conducted elsewhere.<sup>[1,7,17,18]</sup> It is, however, far less than 70.5%, 78%, and 81% that were recorded in Enugu, Orlu, and Maiduguri, respectively.<sup>[4,18,19]</sup> In contrast, Jamal *et al.*<sup>[20]</sup> in Pakistan documented ovarian cancer (42.4%) being the

most common cause of all genital cancers, followed by cervical cancer. These findings indicate that the incidence of cervical cancer is still high in sub-Saharan Africa. In developing countries, due to low resources and lack of awareness there has not been much improvement in the screening program. Fortunately, there is a marked reduction in the incidence of cervical cancer in our center over the study period probably as a result improvement in screening exercise. To arrest the trend of cervical cancers, Government in developing countries must recognize cervical cancer as a major public health concern and allocate appropriate resources for its prevention and treatment.<sup>[21]</sup> The mean age for cervical carcinoma patients in this study was  $55.50 \pm 12.71$  years. This finding is similar to  $57.5 \pm 12.6$  years documented by Iyoke *et al.*<sup>[3]</sup> It is, however, higher than mean age of  $46.25 \pm 4.99$  years reported by Yakasai *et al.*<sup>[5]</sup>

Ovarian cancer constituted 28.1% for gynecological cancers accounting for the second most common in this study. This finding is similar to 21.1% and 20.6% documented in Enugu and Imo, respectively.<sup>[7,18]</sup> It is however at variance with an earlier study that reported incidence of 2.66% in the same place and 8.2% documented in another place.<sup>[7,9]</sup> The mean age at presentation was  $42.34 \pm 14.91$  years. This is consistent with the findings of  $45.4 \pm 17.1$  and  $45.7 \pm 4.3$  years made in Enugu and Lagos, respectively.<sup>[3,9]</sup> It is, however, lower than  $57 \pm 4.5$  years reported in another study.<sup>[5]</sup> This study revealed a highest case fatality rate with ovarian cancer and this is similar to reports by Okunade *et al.*<sup>[9]</sup> This is probably due to their late presentations as present with nonspecific symptoms and there is no standard screening technique for early diagnosis of ovarian cancer. As it is difficult to detect early in its evolution when it is still curable, over 75% of patients already have advanced disease at diagnosis.<sup>[7,9]</sup>

The endometrial cancer accounted for 10.2% of the female genital cancers in this study and it is consistent with the findings of 10.1% by Joseph *et al.*<sup>[11]</sup> in Abakiliki. This is comparable to findings of 11.8% and 13.3% reported in Enugu and Port Harcourt, respectively,<sup>[16,17]</sup> but higher than 4.3% documented by Vijender *et al.*<sup>[2]</sup> However, its prevalence is much lower than 30.5% that was recorded in Kano.<sup>[5]</sup> The mean age for the endometrial cancer of  $50.54 \pm 15.18$  years noted in this study was less than  $62.4 \pm 8.3$  years cancers documented in Kano,<sup>[5]</sup> but it is in agreement with the mean age of  $56.1 \pm 12.7$  and 54 years as reported by Iyoke *et al.*<sup>[3]</sup> and Muhammad *et al.*,<sup>[10]</sup> respectively.

In this study, choriocarcinoma is responsible for 6.6% of gynecological malignancies and it is comparable to 4.2% reported in other places.<sup>[3,22]</sup> Contrary to these findings,

choriocarcinoma was found to be the second most common malignant tumor of female genital tract in Ibadan, Nigeria.<sup>[7]</sup> It is worthy of note that this essentially affected the women only in their reproductive age group.

On the contrary, vulva cancer is the least and constituted 2.4% of gynecological cancer in this study. All the women affected in this study were of menopausal age and the mean age of occurrence was  $63.50 \pm 15.09$  years. This is comparable to  $58.7 \pm 4.9$  and  $55 \pm 6.3$  reported in Enugu, Nigeria, and Burkina Faso, respectively.<sup>[3,23]</sup>

Majority (60.5%) of the gynecological cancer cases presented at advanced stages of the disease and this is comparable to 80% of the women noted to have presented at advanced stages (stages III and IV) in a study conducted by Okunade *et al.*<sup>[9]</sup> in Lagos. The perception of the general public not to seek for medical advice unless necessary, low level of awareness in our low-resource setting, absence or poor quality of screening programs, lack of health care providers and policy makers, limited access to health care services and poor referral system are attributed to be the cause of late presentation these patients.<sup>[7]</sup>

The most common cause of death among cancer patients in this study was renal failure unlike findings in another study that documented anemia as the most common sequelae of various cancer cases.<sup>[4]</sup>

## Conclusion

Cervical cancer remains the most common gynecological cancer in Abuja, Nigeria; fortunately, the incidence is currently showing a downward trend probably due to improvement in cervical screening exercise. This is followed by ovarian cancer which is a major cause of case fatality and the preponderance of the gynecological cases presenting in advanced stage and the cause of mortality were mainly due to renal complications. Thus, education and public enlightenment on routine screening and treatment of premalignant lesions of female genital tract malignancies is the way forward.

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## Conflicts of interest

There are no conflicts of interest.

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