

Frequency and Pattern of Cancers of Female Genital Tract in Maiduguri, Northeast Nigeria: An Update

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ABSTRACT

Background: Cancers of the female genital tract are quite common worldwide and constitute a public health problem. They continue to exert a heavy toll on female population even though majority are preventable with currently effective preventive measures. We provide an update on the pattern of gynaecological malignancies and determine the changing trends of these cancers reported in our tertiary health institution. **Methods:** This is a retrospective, descriptive study of all histologically-diagnosed cases of female genital tract malignancies at the University of Maiduguri Teaching Hospital (UMTH), over a period of 10 years (2015– 2024). Records of diagnosed cases of gynaecological malignancies were retrieved from the Histopathology request forms and Cancer Registry. Demographic data, presenting complaints, tumour sites and histopathologic types were extracted. The results were analyzed using descriptive statistics. **Results:** The total number of cancers diagnosed during the period of study was 2809, out of which 1667 cases were from the female population, while 530 were cancers of female genital tract. Therefore, gynaecological malignancies constituted 18.9% of overall cancer cases and 31.7% of all female cancers. The age range for the female genital tract cancers was from 9 years to 85 years. The peak age group of occurrence of the malignancies was 41 – 50 years, while the lowest age group was 1 – 10 years; the mean age was 48.8 ($\pm$ 8.6). Cervical cancer was the most common malignancy of female genital tract accounting for 63.8 % of cases. Other gynaecological malignancies analyzed included cancers of uterine corpus (n=98; 18.5%), ovary (n=74; 14.0%), and vulvovaginal (n=20; 3.8%). The four most common presenting complaints were abnormal vaginal bleeding, abnormal vaginal discharge, lower abdominal pain and abdominal swelling. **Conclusion:** This study shows that cancers of the female genital tract represent a significant proportion of malignancies in the female population, especially those in their prime reproductive age. Cervical cancer is still the leading gynaecological malignancy despite being a preventable cancer. Therefore, concerted efforts are needed to reduce the burden of these malignancies.

Key words: Female genital tract, Cancers, Pattern, Frequency, Maiduguri, Nigeria

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Introduction

Cancers of the female genital tract constitute a major global health problem with estimated burden of these cancers in the year 2020 as 1,398,601 incident cases and 671,875 deaths.^{1,2} The prevalence and burden of female genital tract cancer in developing countries especially sub-Saharan and eastern Africa is quite high with approximately 1:4 of all cancers in women in those countries being gynaecological cancers.^{1,2,3,4} In Nigeria, the incidence of female cancers is also on the increase, with gynaecological cancer representing one-third of cases.⁴⁻¹¹ Although there are studies that reported declining trend of cervical cancer cases from countries with established population-based screening program as well as from occasional studies in developing countries,^{13,14} cervical cancer is still the most common malignancy of the female genital tract in low- and middle-income countries.⁶⁻¹⁶ In these countries, cervical cancer is the



second most common cancer in the female population next to breast cancer. It however remains most common cancer in some African countries like Malawi and Zimbabwe.¹³ While cervical cancer continues to be dominant gynecological malignancy in the developing countries, endometrial cancer specifically adenocarcinoma, is the leading cancer of the female genital tract in developed countries partly due to reduction in the incidence of cervical cancer following widespread use of cervical cancer preventive measures.^{13,17} However, few studies have shown preponderance of choriocarcinoma in the uterine corpus.¹⁸ In low and middle-income countries, the incidence of ovarian malignancies is increasing and therefore they are the second most common gynecological cancers.^{4,6-10} Worldwide, vulval and vaginal cancers are less common compared to the malignancies of aforementioned organs of the female genital tract.²⁻¹³

Although varied symptomatology may be encountered in patients with gynecological cancers, depending on the stages at presentation and sites of tumour, common chief complaints include abnormal vaginal bleeding, post-menopausal bleeding, abnormal vaginal discharge, abdominal swelling and abdominal pain.^{1,4,5,7-12}

Persistent infection with high-risk human papilloma virus (HPV) is strongly associated with cervical cancer, and to a lesser extent, it is also associated with vulvo-vaginal squamous cell carcinoma.^{19,20} However, genetics and hormonal imbalance are implicated more in the development of cancers of uterine corpus, fallopian tube and ovary.^{13,17}

This study is a follow-up review of earlier studies in our centre done 25 years ago by Kyari *et al* and 10 years ago by Usman *et al*.^{4,21} The aim is to determine the profile of the cancers of female genital tract and update the information in relation to the succeeding 10 years' data for more appropriate management and prevention of gynaecological cancers in Maiduguri, Northeast Nigeria.

Methods

This is a retrospective, descriptive study conducted at the University of Maiduguri Teaching Hospital (UMTH), Maiduguri over a ten-year period between January 2015 and December 2024. The study centre is a tertiary health institution in the Northeastern Nigeria that provides clinical services to the people of Borno state in Nigeria and beyond.

All records of cases of histologically diagnosed cancers of the vulva, vagina, cervix, uterine corpus, fallopian tube and ovary were retrieved from the Cancer Registry and archives of Histopathology

Department. The diagnoses were reviewed and histologically classified according to the 5th Edition of the World Health Organization protocol on classification of the tumours of the female genital tracts. The records of yearly-diagnosed cases of total cancers of all histological types were also retrieved from the hospital Cancer Registry. Demographic data, chief complaints at presentation and histopathologic types were extracted. The results were analyzed using descriptive statistics and displayed in frequency tables and charts.

Results

During the study period, there were 2809 histologically confirmed cases of cancer from all sites and in both males and females. The total number of female cancers was 1667, out of which 530 were malignancies of female genital tract. Therefore, gynaecological cancers constituted 18.9% of overall cancer cases and 31.7% of all female cancers. The age range for the female genital tract cancers was 9 to 85 years; the mean age was 48.8 (SD± 8.6) and the modal age group was 41 – 50 years as shown in table 1. The uterine cervix was the most common site of female genital tract malignancies constituting 63.8% (338/530), in patients with age range 25 years to 84 years, and modal age group of 41 – 50 years.

Malignancies of the corpus uteri represented the second most common gynecological cancers accounting for 18.5% (n=98) of cases and included choriocarcinoma (n=46; 8.7%) and cancers of the endomyometrium (n=52; 9.8%). Ovarian cancers accounted for 14.0% (n=74) of female genital tract malignancies, while the vulvo-vagina represented the least site of cancers and together constituted 3.8% (n=20) of the cases as shown in figure I. In majority of cases, patients with ovarian and endometrial cancers were in their 5th and 6th decades of life. However, choriocarcinoma was commoner in younger reproductive age women with a mean age of 26.4± 8.6 years. The modal age group of patients with vulvovaginal cancers was 61 – 70 years (table 2). There was no recorded case of fallopian tube cancer. Majority of the patients had more than one symptom at presentation. Overall, the four most common clinical presentations were abnormal vaginal bleeding (67.4%), abnormal vaginal discharge (40.8%), lower abdominal pain (37.4%) and abdominal swelling (19.6%). Other features included weight loss (16.8%), difficulty in passing urine/ obstructive uropathy (9.6%), leakage of urine (6.0%), bloody sputum (2.6%), vaginal nodules (2.1%), and vulval mass (1.3%) as shown in table 3.



Table 1: Age distribution of patients with female genital tract cancers

Age group (years)	Number of cases	Percentage (%)
1 – 10	1	0.2
11 – 20	12	2.3
21 – 30	45	8.5
31 – 40	101	19.0
41 – 50	155	29.2
51 – 60	119	22.5
61 – 70	70	13.2
71 – 80	22	4.2
81 – 90	5	0.9
Total	530	100

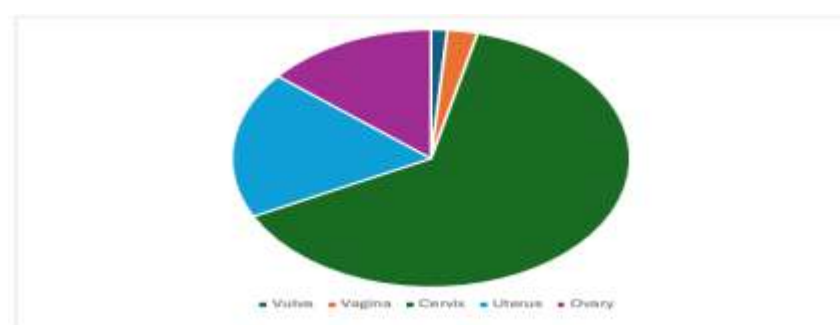


Figure I: Frequency distribution of female genital tract cancers by sites

Table 2: Age distribution of patients with individual gynaecological cancer by topography

Age	Vulva	Vagina	Cervix	Uterus	Ovary
1 – 10	0	0	0	0	1
11 – 20	0	0	0	9	3
21 – 30	1	1	7	23	13
31 – 40	2	2	65	20	12
41 – 50	1	3	117	15	19
51 – 60	0	3	88	14	14
61 – 70	2	3	43	15	7
71 – 80	1	1	17	0	3
81 – 90	0	0	1	2	2
Total	7	13	338	98	74

Table 3: **Clinical presentation of patients with female genital tract cancers**

Clinical features	Number of cases	Percentage (%)
Abnormal vaginal bleeding	357	67.4
Abnormal vaginal discharge	216	40.8
Lower abdominal pain	198	37.4
Abdominal swelling	104	19.6
Weight loss	89	16.8
Difficulty in passing urine	51	9.6
Leakage of urine	32	6.0
Bloody sputum	14	2.6
Vaginal nodule	11	2.1
Vulval mass	7	1.3

This table allows multiple responses

Discussion

The research investigated the frequency and pattern of gynaecological malignancies in UMT. The results offered insights that both align with and differ from previously published studies.^{4,12}

Female genital cancer remained a burden and has not changed over the years in the centre. In this study, gynaecological cancers accounted for a third portion of all female cancers, similar to reports by other authors in the same institution.⁴ The finding of 31.7% of female genital cancer in the study is comparable to Usman *et al* finding of 32% in the same centre.⁴ Women within the age range of 41-50 are most frequently affected.

Cervical cancer is the most common female genital cancer found in the study, a finding that aligns with findings of the studies conducted in Nigeria and other African countries.¹⁻¹² Despite cervical cancer being preventable through adequate screening measures, it continued to significantly affect the female population in low-income settings.^{2,3} This has largely been attributed to the lack effective nationally-organized screening programs in our settings which contributes to the disease progression. The majority of those affected presented with variety of symptoms with abnormal vaginal bleeding being the most predominant complaint, an observation that was reported by several authors.^{4,7,9,21-24} However, the finding by Nzeribe *et al* of ovarian cancer being the commonest gynaecological cancer in their three-year review

study in a tertiary hospital in eastern Nigerian, is divergent to what our study showed.⁵

Interestingly, uterine cancer is the second most common cancer in this study forming about 18.5% of the gynaecological cancers, in contrast to Usman *et al* and Kyari *et al* in the same centre in previous years.^{4,21} In both studies, ovarian cancer was the second most common cancer with uterine cancer being the third most common cancer, like in other findings in Nigeria.^{4,12,22} This increase in uterine cancer in this study may not be unrelated to the categorization of all uterine cancer (choriocarcinoma and malignancies of endometrium) as a single entity, although Kyari *et al* combined both cancers as malignancies of the uterus.

Least common cancer in the centre is vulvo-vaginal cancer forming 3.8% of the female genital cancers. This narrative is not different from the studies by Usman *et al* and Kyari *et al* as being the least cancer but in-between in the frequency compared to the previous findings (3.8% vs 2.3% and 4.7%) in the same centre. The higher rate found in the study is due to increase health seeking behaviour in the elderly women. In addition, the previous study of Usman *et al* was done during insurgency period making referral system difficult. The similar finding of low frequency of vulvovaginal cancer is seen in other literatures across the world.^{6,22,23} No fallopian tube cancer was recorded during the period under review.



The mean age associated with the cancers in this study was 48.8 (SD± 8.6) with age range 9-85 years, and the modal age group was 41 – 50 years. The findings of previous studies showed age range of 18-85 years.^{4,21} The low age range seen in this study is dissimilar to the higher age range of 18-92.^{4,5,7} The lower age range in this study may largely be due to improved awareness, diagnostics and healthcare access leading to earlier detection of malignancies that were previously undiagnosed in children.

Cervical cancer was mostly seen in patients with modal age group of 41 – 50 years. The mean age in preceding years before the years under review was 51.5.⁴ Similarly, Usman *et al*, found age range of 40-49 years for cervical cancer. Usman *et al* in Katsina and Adefuye *et al* discovered age range of 51-98 in Katsina, and Sagamu, southwestern, Nigeria.^{6,9}

Fifth to sixth decade of life is associated with ovarian and endometrial cancer and overlapped with age range of cervical cancer. Same finding was documented in the review at the centre five years ago. Similarly, Usman *et al* in Katsina found the age bracket for corpus uterine cancer to be 50-59.^{6,9}

Choriocarcinoma was found in women at their peak reproduction age of 26.4± 8.6 years in this review. Similar age range of 26.6 ± 8 years was seen in previous study.⁴ This is slightly lower than the finding of 29.3±2.1 years by Okunade KS in southwestern Nigeria, and lower than that seen in Owerri, southeastern Nigeria, where the median age for choriocarcinoma was 41 (29- 49) years.^{5, 22}

Older women in their 6- 7th decade of life, were seen to have vulvovaginal cancer in our centre just like it is the age seen in most studies^{4-12,21-24}.

While majority of the women presented with multiple symptoms, abnormal vaginal bleeding is the most common presentation. This is not surprising since cervical and uterine cancers top the list of cancers in this study. This observation of abnormal vaginal bleeding being the most common presentation of female genital tract malignancies, is like the findings of Katagum *et al* and Ogunlaja *et al* in their related studies.^{1,24}

Conclusion

This study shows that there is significant increase in the number of cancers of the female genital tract compared to the previous studies. Although cervical cancer is still the leading gynaecological cancer, corpus uterine malignancies are also on the upward trend. The fact that most women are affected in their reproductive age by preventable cancers, concerted efforts are needed to curtail the burden of these malignancies.

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