



■ Original Research Article

Pattern and Outcome of Gynaecological Malignancies at a Tertiary Hospital in the Federal Capital Territory (FCT), Nigeria.

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ABSTRACT

BACKGROUND: Gynaecological cancers in Nigeria are associated with high morbidity and mortality due to late presentation and limited treatment facilities. Presenting in their advanced stage (FIGO stage III and IV) makes treatment options restricted with poorer prognosis and survival. This study will bridge the knowledge gap by evaluating the trend and outcome of the disease at a tertiary hospital in the Nigeria's Federal Capital Territory. **AIM:** To evaluate the trend in gynaecological cancer, stage at diagnosis, treatment and outcome of patients diagnosed at Federal Medical Centre Abuja. **MATERIALS AND METHODS:** A 5-year retrospective cross-sectional study of all histological diagnosed gynaecological cancer managed at Federal Medical Centre Abuja from 14th May 2018 to 13th May 2023. Their case notes were retrieved and relevant information extracted. Data was collected using an Epi Info™ version 7.2.2.6 and results presented as frequencies and percentages for categorical variables and mean and standard deviation for continuous variables. **RESULTS:** Out of the 8,425 gynaecological cases managed within the study period, 58 of them were gynaecological cancers, giving a prevalence of 0.69%. Two cancer cases were managed in 2018 and 18 by mid- 2023. Their overall mean age was 50.96 ± 12.6 years. Cervical cancer was the commonest with a prevalence of 39.66%, followed by ovarian (27.59%), endometrial (25.86%), choriocarcinoma (5.17%) and vulva (1.72%). Majority presented in early stage 1 disease (39.66 %), followed by stage 3 (27.59%), then stages 2 (24.14%) and 4 (8.62%). Majority (32.76%) received surgery/chemotherapy, 31.03% referred for chemoradiation alone. The overall outcome revealed that 45 (77.59%) were alive and 13 (22.41%) were dead as at 2023. Ovarian cancer contributed 37.50% to the mortality followed by cervical cancer (30.77%) and endometrial cancer (23.08%). **CONCLUSIONS:** The cases of gynaecological cancers have been on the rise in our facility, with cervical cancer being the commonest. Most were of early-stage disease with high survival rate. The mortality recorded were mostly from advanced stage disease and delay in commencement of radiotherapy, necessitating government intervention.

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INTRODUCTION

Gynaecological cancers are common in Nigeria and most of the cases present in late stages due to

limited access to screening and treatment hence, increased morbidity and mortality. The global statistics conducted in 2002 indicate that gynaecological cancers accounted for 19% of the estimated new cancer cases, 2.9 million cancer deaths and 13 million 5- year prevalent cancer cases among women¹.

The global cancer incidence compiled by World cancer research fund international in 2020 showed cervical cancer to be the 4th, uterine cancer the 6th, ovarian cancer the 8th, vulva cancer the 21st and vaginal cancer the 27th most common cancer in women².

Worldwide, cervical cancer contributed to 660 000 new cases and around 350 000 deaths in 2022⁽³⁾. Nigeria has a national standardized prevalence rate of 22.11 per 100,000⁽⁴⁾. The highest rates of cervical cancer incidence and mortality are in low- and middle-income countries reflecting major inequities due to lack of access to national HPV vaccination, cervical screening and treatment services and social and economic determinants³.

Cervical cancer is caused by persistent infection with the human papillomavirus (HPV) and is majorly preventable. Women living with HIV are 6 times more likely to develop cervical cancer compared to women without HIV³. In 2020, GLOBOCAN estimated 12,075 new cases of cervical cancer with 7,968 deaths in Nigeria⁴. Poverty, ignorance, lack of organized screening program and access to preventive measures are some of the reasons for the high prevalence while high fatality rate is due to late presentation and lack of access to treatment after diagnosis⁴.

Endometrial cancer is the 6th most common cancer among women globally with statistics recording 417,000 new cases in 2020². Some factors associated with an increased risk of endometrial cancer include nulliparity, late menopause (after the age of 55), oestrogen-only hormone replacement therapy, Tamoxifen use, and a family history of endometrial or colorectal cancer². There is also strong evidence that overweight or obesity, tall stature and diabetes mellitus can increase the risk as well⁵.

Ovarian cancer is a significant health concern worldwide ranking as the 8th most common cancer in women globally². In 2020, there were more than 313,000 new cases of ovarian cancer. Risk factors associated with ovarian cancer include low parity, early menarche, late menopause, hormone therapy, smoking, and family history². Additionally, being tall and

overweight or obese are linked to an increased risk of ovarian cancer⁵.

Vulva cancer makes up about 6% of cancers diagnosed in the female reproductive organs and less than 1% of all cancers in women. Worldwide, an estimated 45,240 people were diagnosed with vulva cancer and estimated 17,427 people died from vulva cancer in 2020⁵. HPV infection, smoking, immune system deficiency and advanced age are implicated risk factors³.

There are currently no recommendations from epidemiological studies⁶ regarding general population screening for either endometrial or ovarian cancers and this poses a lot of challenges in prevention/early detection of these cancers. Majority of women in Nigeria have poor health seeking habits and mostly resort to self-medication as there are no strict annual health check schemes in place and services are paid out of pockets. Women at high risk for ovarian or endometrial cancer are encouraged to have an annual ultrasound check.

Although cytological screening has undoubtedly led to a major decline in cervical cancer burden in several resource-rich countries^{7,8}, the reverse is the case for many resource-constrained countries like Nigeria where organized screening for pre-cancerous lesions of the cervix is still not practised. Screening in Nigeria is mostly opportunistic or during outreaches and this result in poor coverage of the population at risk.

Most of the patients present in advanced stage probably due to asymptomatic early stage and lack of awareness. Presenting in advanced stage (FIGO stage III and IV) makes treatment options restricted with poorer prognosis and survival²⁻⁴. Most patients referred for radiotherapy which is the standard of care for advanced stage of cancers end up at home due to lack of access, either because they cannot afford treatment or the facilities are not available.

There is paucity of data on gynaecological cancers in the Federal Capital Territory (FCT) and hence a need to evaluate the trend, disease stage, treatment and outcome at Federal Medical Centre Abuja (FMC Abuja). This study will serve as a baseline from which to assess the effect of interventions to eliminate/reduce the burden of gynaecological cancer as a public health problem. This would also serve as part of the multi-centre study (involving University of Abuja Teaching Hospital, National Hospital Abuja and FMC Abuja) that will provide a more robust data on gynaecological cancers in Abuja.

Research hypothesis: Women diagnosed with gynaecological cancer at Federal Medical Centre Abuja predominantly present with advanced-stage disease (FIGO stage III or IV), and a significant

proportion do not complete the recommended chemoradiation treatment.

MATERIALS AND METHODS

Study Designs and Setting

This was a five-years retrospective cross-sectional study of all the gynaecological cancers managed in Department of Obstetrics and Gynaecology of the Federal Medical Centre Abuja (FMC Abuja) from 13th May 2018 to 12th May 2023. FMC Abuja is one of the main referral tertiary hospitals with a functional Gynaecological-oncology unit and offer a multi-disciplinary team approach for cancer management in Abuja. FMC Abuja also has a good referral collaboration with the National Hospital Abuja for radiotherapy services.

Federal Capital Territory (FCT) has an estimated population of over 3 million comprising different ethnic groups⁹. FCT is located in the North Central region of the nation and bounded by states including Nassarawa, Kogi, Kaduna and Niger.

Study Population

All cases of gynaecological cancers (cervical, endometrial, ovarian, vulval, vaginal cancers and choriocarcinoma) managed during the study period at the Federal Medical Centre Jabi with histological diagnoses were included in the study. Cases of suspected gynaecological cancer not diagnosed histologically or with incomplete information and cases of gynaecological cancer managed outside the study period were excluded from the study.

Method of Data Collection/Analysis

All the gynaecological malignancies managed in the facility were identified from the theatre, gynaecological ward/clinic, and colposcopy clinic. Their case notes were retrieved and relevant data extracted. The data extracted include: age, marital status, parity, telephone number of patient/or next of kin, HIV status, level of education, age at menarche, presenting complaint, stage at presentation, histological type, treatment offered, treatment received, time from treatment to worsening of symptoms, status of the patient (alive/dead) as at May 2023. All these pieces of information were captured using a structured labelled proforma and entered into Epi Info™ version 7.2.2.6 2018 data page¹⁰. The data was analysed by descriptive statistics and results presented as means and standard deviation for continuous variables and frequencies and percentages for categorical variables.

The outcome of interest include: prevalence of gynaecological cancers, commonest stage at presentation, treatment received: surgery, chemotherapy, chemoradiation and overall survival and mortality rates.

Ethical Consideration

Ethical approval was obtained from the Federal Medical Centre Abuja Health Research and Ethics Committee according to the declaration of Helsinki¹¹.

RESULTS

Socio-Demographic Characteristic of The Study Population

A total of 8,425 gynaecological cases were managed within the study period out of which 58 were histologically diagnosed gynaecological cancers (0.69%). Approximately twelve cases of suspected gynaecological cancer managed without histological diagnoses were excluded from the study. The overall mean age was 50.96 ± 12.6 years, with 14 years being the minimum age and 75 years as the maximum age. Women between ages 45-59 accounted for majority (46.55%) of the cases. Majority (46.55%) were multipara (2-5 children) with the overall median parity of 3. Also, majority (86.21%) had tertiary education, currently married (89.66%), and self-employed (46.55%) as shown in Table 1.

The Prevalence of Gynaecological Cancers at FMC Abuja

The pattern of the gynaecological cancers showed

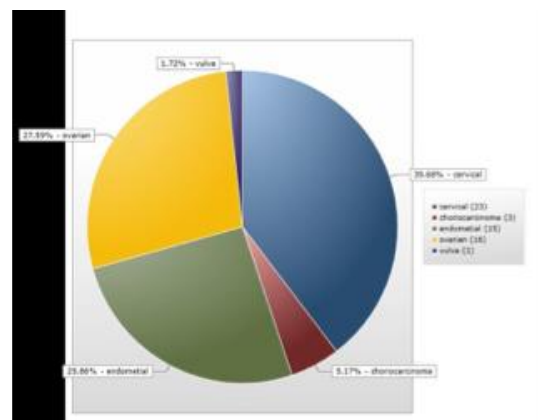


Figure 1: Prevalence of Different Types of Gynaecological Cancers
cervical cancer to be the commonest cancer with a prevalence of 39.66%, followed by ovarian

(27.59%), endometrial (25.86%), ovarian cancer, choriocarcinoma and vulva cancers presented in their stages II, III and IV cancers. There were no fallopian tube and vaginal cancer cases seen, see Figure 1.

Table 1: Socio-Demographic Characteristics

Variables	Frequency (n)	Percentage (%)	Cervical n (%)	Ovarian n (%)	Endometrial n (%)	Choriocarcinoma n (%)	Vulva n (%)	P
Age-group (years)	Mean	50.96 ±12.6						0.012
14-24	15	25.86	5(21.74)	6(37.50)	0(0.00)	3(100.00)	1(100.0)	
25-44	27	46.55	14(60.87)	3(18.57)	10(66.67)	0(0.00)	0(0.00)	
45-59	15	25.86	4(17.39)	6(37.50)	5(33.33)	0(0.00)	0(0.00)	
60-75								
Parity group	median	3						0.23
0-1	21	36.21	5(27.74)	8(50.00)	5(33.33)	3(100.0)	0(0.00)	
2-5	27	46.55	14(60.87)	5(31.25)	7(46.67)	0(0.00)	1(100.0)	
≥6	10	17.24	4(17.39)	3(18.75)	3(20.00)	0(0.00)	0(0.00)	
Education								0.94
No formal	1	1.72	1(4.35)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	
Secondary	7	12.07	2(8.70)	3(18.75)	2(13.33)	0(0.00)	0(0.00)	
Tertiary	50	86.21	20(86.96)	13(81.52)	13(86.67)	3(100.00)	1(100.0)	
Occupation								0.45
Self employed	27	46.55	9(39.13)	9(56.25)	6(40.00)	2(66.67)	1(100.0)	
Public servant	13	22.41	5(21.74)	4(25.00)	3(20.00)	1(33.33)	0(0.00)	
Private servant	8	13.79	2(8.70)	1(6.25)	5(33.33)	0(0.00)	0(0.00)	
Student	1	1.72	0(0.00)	1(6.25)	0(0.00)	0(0.00)	0(0.00)	
Housewife	9	15.52	7(30.43)	1(6.25)	1(11.11)	0(0.00)	0(0.00)	
Religion								0.197
Christianity	47	81.03	19(82.61)	10(62.50)	14(93.33)	3(100.00)	1(100.0)	
Islam	11	18.97	4(17.39)	6(37.50)	1(6.67)	0(0.00)	0(0.00)	
Marital status								0.93
Single	6	10.34	2(8.70)	3(18.75)	1(6.67)	0(0.00)	0(0.00)	
Married	50	86.21	20(86.96)	13(81.25)	13(86.67)	3(100.00)	1(100.0)	
Widowed	2	3.45	1(4.35)	0(0.00)	1(6.67)	0(0.00)	0(0.00)	
HIV status								0.003
Negative	53	91.38	19(82.61)	16(100.0)	15(100.00)	3(100.00)	0(0.00)	
Positive	5	8.62	4(17.39)	0(0.00)	0(0.00)	0(0.00)	1(100.0)	

Table 2: Cancer Stage at Presentation and Treatment

Type of cancer	Stage of cancer										Total	P
	1a	1b	1c	2a	2b	2c	3a	3b	4a	4b		
cervical	3(13.04)	3(13.04)	1(4.35)	1(4.35)	10(43.48)	0(0.00)	2(8.70)	3(13.04)	0(0.00)	0(0.00)	23(39.66)	0.046
choriocarcinoma	1(33.33)	0(0.00)	0(0.00)	0(0.00)	1(33.33)	0(0.00)	0(0.00)	1(33.33)	0(0.00)	0(0.00)	3(5.17)	
Endometrial	0(0.00)	8(55.33)	1(6.67)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	4(26.67)	0(0.00)	2(13.33)	15(23.86)	
ovarian	2(12.50)	0(0.00)	4(25.00)	0(0.00)	1(6.25)	1(6.25)	3(18.75)	2(12.50)	1(6.25)	2(12.50)	16(27.59)	
Vulva	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	1(100.0)	0(0.00)	0(0.00)	1(1.70)	
TOTAL	6(10.34)	11(18.97)	6(10.34)	1(1.72)	12(20.69)	1(1.72)	5(8.62)	11(18.97)	1(1.72)	4(6.90)	58(100.0)	
Type of cancer	Treatment offered						Total					
	chemoradiation	chemotherapy alone	Surgery	surgery/chemoradiation	surgery/chemotherapy							
Cervical	17(73.91)	0(0.00)	4(17.39)	1(4.35)		23(39.66)						
Choriocarcinoma	0(0.00)	2(66.67)	0(0.00)	0(0.00)	1(33.33)	3(5.17)						
Endometrial	1(6.67)	0(0.00)	6(40.00)	5(33.33)	3(20.00)	15(25.86)						
Ovarian	0(0.00)	0(0.00)	2(12.50)	0(0.00)	14(87.50)	16(27.59)						
Vulva	0(0.00)	0(0.00)	0(0.00)	1(100.00)	0(0.00)	1(1.72)						
TOTAL	18(31.03)	2(3.45)	12(20.69)	7(12.07)	19(32.76)	58(100.0)						

The stage of Cancer at Presentation

Overall, majority (23 out of 58) of the women presented in early stage 1 disease giving a rate of 39.66%, followed by stage 3 (27.59%), then stages 2 (24.14%) and 4 (8.62%). An in-depth review showed that almost all the endometrial cancer presented in early stage 1, whereas cervical cancer,

Treatment Offered

The various treatments offered to the patients were evaluated as shown in Table 2. Generally, majority (32.76%) received surgery/chemotherapy, 31.03% referred for chemoradiation alone, 20.69% received surgery alone, 12.07% received surgery/chemoradiation

and 3.45% received chemotherapy alone. Further analysis showed that majority of those with stage 1 disease had surgery alone (52.17%) followed

100% at stage 3. These were shown in Figure 2 and Table 3 below:

Table 3: Outcome in Relation to the Cancer Type and Stage

Survival rate in relation to the cancer type and stage

Type of cancer	stage of cancer										
	1a	1b	1c	2a	2b	2c	3a	3b	4a	4b	Total
Cervical	3 (15.79)	3(15.79)	1(5.26)	0 (0.00)	7(36.84)	0(0.00)	2(10.53)	3(15.79)	0(0.00)	0(0.00)	19(100)
Choriocarcinoma	1(33.33)	0(0.00)	0(0.00)	0(0.00)	1(33.33)	0(0.00)	0(0.00)	1(33.33)	0(0.00)	0(0.00)	3(100.0)
Endometrial	0(0.00)	7(58.33)	1(8.33)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	4(33.33)	0(0.00)	0(0.00)	12(100)
Ovarian	2(20.00)	0(0.00)	3(30.00)	0(0.00)	1(10.00)	1(10.00)	2(20.00)	1(10.00)	0(0.00)	0(0.00)	10(100)
Vulva	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	1(100.0)	0(0.00)	0(0.00)	1(100.0)
TOTAL	6(100.0)	10 (100)	5(100.0)	0(100.0)	9(100.0)	1(100.0)	4(100.0)	10(100)	0(100.0)	0(100.0)	45(100)

Mortality rate in relation to cancer type and stage

Type of cancer	stage of cancer										
	1a	1b	1c	2a	2b	2c	3a	3b	4a	4b	Total
Cervical	0(0.00)	0(0.00)	0(0.00)	1(25.00)	3(75.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	4(100.0)
Choriocarcinoma	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(100.0)
Endometrial	0(0.00)	1(33.33)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	2(66.6)	3(100.0)
Ovarian	0(0.00)	0(0.00)	1(16.67)	0(0.00)	0(0.00)	0(0.00)	1(16.67)	1(16.67)	1(16.67)	2(33.33)	6(100.0)
Vulva	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(100.0)
TOTAL	0(100)	1(100.0)	1(100.0)	1(100.0)	3(100.0)	0(100.0)	1(100.0)	1(100.0)	1(100.0)	4(0.00)	13(100)

by surgery/chemotherapy (26.09%) then chemoradiation alone (13.04%), with both chemotherapy alone and surgery/chemoradiation accounting for 4.35%. Based on the individual cancers, majority (73.91%) of patients with cervical cancer received chemoradiation alone; 66.67% of choriocarcinoma cases received chemotherapy alone; 40.0% of endometrial cancer received surgery alone, 87.50% of ovarian cancer received combined surgery and chemotherapy and the vulva cancer received combined surgery and chemoradiation.

Overall Outcome

The outcome of the disease was evaluated based on survival rate at the time of analysis. Out of the 58 cases managed, 45 (77.59%) were alive and 13 (22.41%) were dead as at 2023. Further analysis showed that ovarian cancer contributed 37.50% to the mortality followed by cervical cancer (30.77%) and endometrial cancer (23.08%). All the five stage 4 cases from the endometrial (2) and ovarian (3) cancers died.

The specific survival rate for individual cancers and the stage at presentation were as followed: For cervical cancer, the survival rate was 82.61% (19 out of 23), with all the seven early stage 1 cases, seven of the eleven stage 2 cases and all the five stage 3 cases alive. For choriocarcinoma, all the three (100%) patients at stages 1, 2 and 3 were alive. Endometrial cancer survival rate was 80% (12 out of 15), with eight of the nine stage 1 cases and all the four stage 3 cases alive. For ovarian cancer, the survival rate stage 1, all the two stage 2 and three of the five stage 3 cases alive. The vulva cancer survival rate was

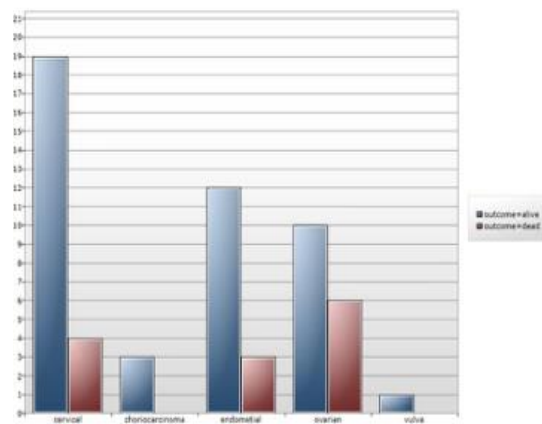


Figure 2: Outcome

Mortality Trend by Year of Diagnosis

There was an increasing number of gynaecological cancer cases as the year progressed from 2 cases in 2018 to 18 cases in 2023. No death was recorded between 2018 to 2020. Most death occurred in 2023 and 2021.

DISCUSSION

Fifty-eight cases of histologically diagnosed gynaecological cancers were managed during the 5-year period with a prevalence of 0.69%. This is lower than 8.4% in Abakaliki, South-east Nigeria¹² and 11.84% in Azare North-east Nigeria¹³. The probable reason for the low prevalence may be the higher socio-economic level of Abuja, being the capital of Nigeria and their improved health seeking behaviour. Also, the

availability of other tertiary institutions within Abuja might be a contributing factor.

The trend showed cervical cancer to be the commonest cancer followed by ovarian, endometrial, choriocarcinoma and vulvar cancers with no cases of vaginal and fallopian tube cancers. This is similar to the study done in Sagamu, South-west Nigeria¹⁴ and in Azare North-east Nigeria¹³, which found cervical cancer as the commonest followed by ovarian, endometrial, and choriocarcinoma with no cases of vaginal and fallopian tube cancers. Also, a systematic review on gynaecological malignancies in Nigeria¹⁵ showed cervical, ovarian and uterine cancers to have the highest rate of occurrence, with vulva, vagina and fallopian tube cancers rarely found. This differed from a similar study in Owerri South-east Nigeria which found ovarian cancer to be the commonest, followed by cervical, endometrial, choriocarcinoma, vulva and vagina cancers¹⁶. Cervical cancer leading the group concurred with it being the 2nd most common female cancer in sub-Saharan Africa¹⁷.

Gynaecological malignancies are known to be prevalent in women in the 5th and 6th decades of life. Our study found that middle aged women (ages 45-59) accounted for majority (46.55%) of the cases. Cervical cancer was seen to be leading in all age-group with exception of the under 25 years that had ovarian cancer only. A study by Joseph et al¹² also showed ages 50-59 as being the commonest affected group and cervical cancer leading in all age-groups.

In the developing countries, gynaecological cancers were known to usually present in their late stages due to ignorance, limited access to screening and treatment⁴. Our study differed by the finding of early stage I disease (39.66%) as the commonest stage at presentation followed by stages III, II and IV. However, this variation was mainly due to the endometrial cancers in which almost all the patients presented early, and this is in accordance with the literatures². In addition, the hospital in collaboration with Federal ministry of health, women affairs, government agencies (Federal Inland Revenue Service, Central Bank of Nigeria) and non-governmental organisations usually conduct yearly free screening for women, giving the women the opportunity to access other care and this might have contributed to this finding of early stage I disease.

This study revealed that majority of the cases (32.76%) received combined surgery/chemotherapy. This was followed closely by chemoradiation alone, surgery alone, combined surgery/chemoradiation and few had chemotherapy alone. Most of the women are still on treatment and follow up. Also, majority of the

patients with stage1 disease had surgery alone. This is in agreement with the common treatment approach where early stage diseases are managed with either surgery or chemoradiation depending on the type of cancer; later stages with combined surgery/chemotherapy or chemoradiation and advanced stages with chemotherapy¹⁸.

The overall survival rate was 77.59% (45) and mortality was 22.41% (13). The high survival rate might be due to early stage at presentation and prompt commencement of treatment. Further analysis showed that ovarian cancer contributed highest to the mortality followed by cervical cancer and lastly endometrial cancer. This was because some of ovarian cancer cases presented with advanced stage of the disease which can account for the high mortality seen in them. Some of the mortality for endometrial cancers presented in their advanced stage and aggressive histological types and also, there were some delays in commencement of radiotherapy due to limited radiotherapy centre in our environment.

The limitations of this study were attributed to the retrospective nature of the study, with loss to follow up, incomplete data, no histological diagnosis for some cases and poor documentation.

CONCLUSIONS/RECOMMENDATION:

The prevalence of gynaecological cancers has been on the rise in our facility, with cervical cancer being the commonest followed by ovarian, endometrial and choriocarcinoma. Most were early stage 1 disease leading to high survival rate within the 5-year period. Most of the mortality recorded were due to advanced disease and delay in commencement of radiotherapy, necessitating government intervention in providing radiotherapy machine to our centre.

We recommend access to Universal health coverage which will include regular screening for women in reproductive age group for early identification and prompt treatment. More collaboration with the Government to provide improved access to Radiotherapy treatment.

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