

ORIGINAL ARTICLE

An Appraisal of the Pattern of Gynaecological Cancers at The University of Port Harcourt Teaching Hospital, Port Harcourt, Nigeria

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ABSTRACT

Background: The pattern of gynaecological cancers varies from country to country and from region to region even in the same country. Understanding the prevalence as well as the histological pattern will aid diagnosis and treatment of patients.

Objectives: To establish the frequency, distribution and histopathologic features of gynaecological malignancies at the University of Port Harcourt Teaching Hospital (UPTH).

Methodology: This was a 5-year retrospective analysis of data from ward admissions and histopathology results. Relevant information extracted were analysed using Microsoft Excel Analysis ToolPak version 2.0.

Results: During the study period from 1st of January 2015 to 31st of December 2019, 94 patients had histologically confirmed gynaecological malignancy with a prevalence of 3.6%. Cervical cancer was the most common in 45 (47.9%) cases, followed by ovarian cancer in 27(28.7%) cases while vaginal and fallopian tube cancers were not reported. The mean age for cervical cancer was 57.71±12.1 years, ovarian cancer 49.96±13.12 years, endometrial cancer 59±13 years, leiomyosarcoma 60.33±0.58 years and vulva 62.40±14.76 years. High parity was significantly associated with cervical cancer ($p=0.0045$, OR=3.5). Squamous cell carcinoma was the commonest histological variant of cervical cancer, while epithelial tumours made up 85.2% of ovarian tumours.

Conclusion: Cervical cancer is the most common gynaecological malignancy followed by ovarian cancer. Reduction of high parity through effective family planning may reduce the prevalence of cervical cancer among the study population. National policy on screening and prevention for cervical cancer in Nigeria is long overdue.

Key words: Gynaecological malignancies, Histopathology, Ovarian cancer, Cancer screening, Port Harcourt

INTRODUCTION

Cancer is a major cause of morbidity and mortality in the world. Gynaecological cancers are the second most common cancers of females after breast cancer.¹ It includes those of

the cervix, endometrium, ovary, vulva, vagina, fallopian tube as well as choriocarcinoma. The distribution and frequency of these tumours vary from one region to another due to different environment, lifestyle, food,

education, health care system, availability of screening, genetic pattern and socioeconomic background.^{1,2,3} The incidence and deaths due to cancer are on the rise globally and it places tremendous strain on the patient, their families and the society; differences in mortality rates exist across the world.³

In developed countries like the United States of America, endometrial cancer is the most common form of gynaecological cancer and is the sixth most common worldwide.¹ In developing countries like Nigeria, India and Pakistan, cervical cancer is the most common form of gynaecological malignancy.^{2,3} The incidence and mortality of cervical cancer has declined in North America during the last 50 years by two thirds due to effective cervical cancer screening program and treatment of premalignant lesions of the cervix.^{1,4} Ovarian cancer is the most fatal of gynaecological malignancies in developing countries as two thirds of cases present at advanced stages due to its non-specific symptoms.^{1,3,5,6}

Cervical cancer incidence is related to human papilloma virus (HPV) infection which is transmitted through sexual activity.⁷ The possibility of transmission of HPV increases with early age at initiation of sexual activity, multiple sexual partners and high-risk sexual partners.^{7,8} The high prevalence of cervical cancer in the developing world is due to ignorance, risky sexual behaviour, absence of population based screening and poor uptake of HPV vaccine.^{7,9,10} In Nigeria, cervical cancer is the most common cancer of the female genital tract accounting for 74.4% of cancers in Benin city, 72.3% in Ibadan, 73.1% in Ilorin, 59.3% in Awka and 73.6% in Port Harcourt.^{11,12,13,14} In Sub-Saharan Africa, cervical cancer has a poor

5-year survival rate as most of the patient present late.¹⁴

Age and parity affects the incidence of gynaecological malignancies.¹ Endometrial and ovarian cancers are more common in the older age group, while cervical cancer is more common in the pre- and peri-menopausal age group.³ Increased parity is protective for endometrial and ovarian cancers whereas cervical cancer is commoner among multiparous women.^{1,3} Vulva and vagina cancers are relatively rare.

Although the frequency of some female genital cancers in our environment is high, there is paucity of literature on the subject. Therefore, this study is designed to provide information regarding the pattern of gynaecological cancers and their frequencies in relation to age and parity. These findings could have a significant implication to devise strategies for effective screening, early diagnosis and timely management to reduce the cancer related morbidities as well as mortalities.

METHODOLOGY

This was a retrospective descriptive study done at the obstetrics and gynaecology department of the University of Port Harcourt Teaching Hospital, Port Harcourt Nigeria. The study population was all women admitted to the gynaecological ward of the department between January 2015 and December 2019. Amongst them, all histologically diagnosed gynaecological malignancies were included in the study group.

The case notes of the patients were retrieved from the medical records department with permission from the heads of the department

of gynaecology and medical records for the use of hospital records. A structured proforma was used to obtain relevant information which include age, parity, site of cancer and histological type. Patients without histological diagnosis were excluded from the study.

Data obtained from the proforma were collated and entered into a spread sheet and data analysed using Microsoft Excel 2017 Analysis ToolPak version 2.0 (Microsoft, Washington, USA). Tables and figures were used to represent the results. The results were expressed in descriptive statistics by simple percentages, means and standard deviation. Significant association between age and gynaecological cancers were tested using Chi-square test and $p < 0.05$ was considered statistically significant.

RESULTS

During the study period, 2590 were admitted into the gynaecological ward. Ninety-four were histologically confirmed cases of female genital tract malignancies and this gave a prevalence of 3.6%. The age range was from 16 to 92 years. The age range of 51-60 years accounted for 31 (33%) of the tumours and was the most frequent. There were lower

percentages seen at the extremes of age groups; < 30 years and > 70 years (3(3.2%) and 10(10.6%) respectively) as shown in table 1.

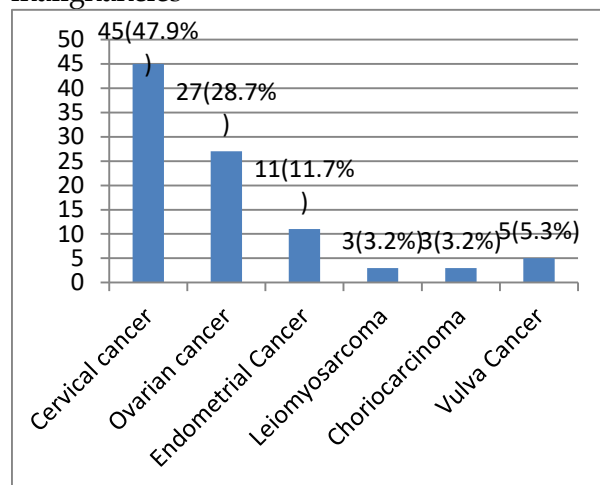
Table 1. Percentage occurrence of malignant tumours of female genital tract according to age group

Age (years)	No. of cases	Percentage
15-30	3	3.2
31-40	10	10.6
41-50	18	19.2
51-60	31	33.0
61-70	22	23.4
>70	10	10.6
Total	94	100

Cervical malignancy showed increased occurrence with increasing parity, with majority of cases seen in women with parity of 4 and above. Ovarian cancer showed two peaks in the nulliparous and para 4 and above group. Nulliparity had the highest frequency in women with endometrial cancer. All patients with Leiomyosarcoma and vulval cancer were grand multiparous as shown in table 2. Thirty-four out of the 45 women with cervical cancer were of high parity (para 4 and above) and when compared to 23 out of 49 women with other genital tract malignancies, the difference was statistically significant.

Table 2. Parity distribution of individual malignant tumour of female genital tract

Parity	Type of Malignancy						P value
	Cervix	Ovary	Endometrium	Leiomyoma	Choriocarcinoma	Vulva	
Para 0	2	7	4	0	0	0	0.0045
Para 1	2	3	1	0	1	0	
Para 2	3	5	1	0	1	0	
Para 3	4	1	2	0	0	0	
Para	34	11	3	3	1	5	
≥4							
Mean parity	5.76±2.97	3.60±3.60	2.54±2.84	6.67±1.53	2.33±1.52	6.60±2.79	

Figure 1. Site distribution of genital tract malignancies

Women with high parity were 3.5 times more likely to develop cervical cancer than other genital tract malignancies ($\chi^2=8.05$, $p=0.0045$, OR= 3.5)

The risk of ovarian and cervical cancer increased above 40 years with vulval malignancy increasing with age above 70 years. None of the women aged 15-30 had endometrial cancer, vulval cancer or leiomyosarcoma. All the cases of choriocarcinoma were 40 years or less. The mean parity for patients with cervical cancer

(5.76 ± 2.97) was higher than those of ovarian cancer (3.6 ± 3.6) and endometrial cancer (2.54 ± 2.84). All cases with vulval cancer and leiomyosarcoma were grand multiparous (table 3).

Ovarian malignancies were noted to be either of epithelial origin (85.2%), germ cell origin (11.1%) or from the sex cord cells (3.7%). Majority of the epithelial ovarian cancers were of serous adenocarcinoma variant (91.3%) with only 2 cases of mucinous adenocarcinoma. The mean age of mucinous adenocarcinoma was 72 ± 4.6 years as compared to that of serous adenocarcinoma which was 49.2 ± 6.1 years. The germ cell tumours were 2 yolk sac tumours and a case of immature teratoma. Squamous cell carcinoma formed the majority (91.1%) of the histological diagnosis of cervical cancer whereas only 3 (6.7%) cases of adenosquamous and one (2.2%) case of verrucous carcinoma were reported. Three cases of leiomyosarcoma and 3 of choriocarcinoma were documented. Vulval carcinoma were all squamous cell carcinoma. (Table 4).

Table 3. Age and parity distribution of gynaecological malignancies

Parameter	Cervical cancer	Ovarian cancer	Endometrial cancer	Leiomyosarcoma	Choriocarcinoma	Vulval cancer
Age (years)						
<30	1	1	0	0	1	0
31-40	2	4	1	0	2	1
41-50	7	9	2	0	0	0
51-60	17	7	4	2	0	1
61-70	13	5	2	1	0	1
>70	5	1	2	0	0	2
Mean age	57.72±12.1	49.96±13.12	59.00±13.00	60.33±0.58	31.00±5.00	62.40±14.76

Table 4. Histological Subtypes of gynaecological malignancies

Site (Total no)	Subtypes	No	Percentage	Mean age
Ovary (27)	Epithelial			
	Serous adenocarcinoma	21	91.3	49.2 years
	Mucinous adenocarcinoma	2	8.7	72 years
	Germ cell			
	Yolk sac tumour	2	66.7	37 years
	Immature teratoma	1	33.3	16 years
	Sex cord			
Granulosa cell	1	100	41 years	
Cervix Ca (45)	Sqamous Cell carcinoma	41	91.1	57.7 years
	Adenosqamous	3	6.7	56.7 years
	Verrocous Carcinoma	1	2.2	60 years
Uterus (14)	Endometrial	11	78.6	59 years
	Adenocarcinoma			
	Leiomyosarcoma	3	21.4	60.3 years
Gestational trophoblasti c Disease (04)	Choriocarcinoma	3	100	31.0 years
Vulva Ca (5)	Squamous cell Carcinoma	5	100	62.4 years

DISCUSSION

Cervical cancer was the most common gynaecological cancer accounting for 47.9% of all gynaecological cases in this study. This is similar to reports from Kano and Abakaliki with incidences recorded as 48.6% and 49.2% respectively.^{14,15} Slightly higher incidences were reported: 57.9% in Enugu, 60% in Imo and 67.8% in Sokoto.^{16,17,18} Cervical cancer was also reported as the most common in Bangladesh (53%) and India (73.4%).^{3,19} This is however different from reports in Pakistan where ovarian cancer was the most common (47%).²⁰ The difference in the prevalence between Nigeria and Pakistan even though both are developing countries is the decreased

risk of HPV infection among Pakistani women due to the tendency to maintain monogamous relationships.²⁰ In Europe endometrial cancers are the most common.³ This high incidence of cervical cancer in the developing world may be attributed to absence of national cervical cancer screening program, low socioeconomic status, child marriage, polygamy and poor uptake of HPV vaccines by girls and women of reproductive age.^{7,9,13}

This study showed an increasing incidence of cervical cancer after the fifth decade of life. The peak age of incidence was found to be 51-60 years. This is similar to report from Enugu but is higher than 40- 49 years reported by

Umeobika *et al.* in Imo and 42-47 years reported by Yakasai *et al.* in Kano.^{14,16,17} The reason for early onset of cervical cancer in Kano women may be due to young age at onset of reproductive career, poor socioeconomic status and high parity compared to women in Port Harcourt.¹⁴ The mean parity of women with cervical cancer in this study was 5.76 which is lower than the mean parity of 7 reported in Kano.¹⁴

High parity was demonstrated in this study to be significantly associated with cervical cancer compared to other genital tract malignancies and women with high parity were about 4 times more likely to develop cervical cancer. Thus, limiting family size through effective family planning may offer beneficial effect.

Cancer of the ovary was the second most common with a prevalence of 28.7%. This is similar to 30.5% in Kano and 29% reported in Bangladesh.^{1,14} The mean age for development of ovarian cancer was 49 years, this is similar to 45.74 years reported by Basse *et al.* in Port Harcourt in 2016 and 46 years reported in Kano.^{6,14} Ovarian cancer was noted to be more common in women of lower parity when compared to the parity of women with cervical cancer; multiparity is said to be protective against ovarian cancer.^{1,21,22} The mean parity for ovarian cancer was 3.6 compared with 5.76 for cervical cancer.

The incidence of endometrial cancer was 11.7% which is similar to 11.8% reported in Enugu.¹⁷ It occurred mostly in post-menopausal women with a mean parity of 2.54 and this follows the prediction that multiparity is protective of endometrial cancer.^{1,17}

Vulval cancer constituted 5.3% of all the malignancies. All affected women were post-menopausal and grand multiparous. Uterine sarcoma and choriocarcinoma had similar proportions of 3.2%. No case of vaginal carcinoma or cancer of the fallopian tube was reported during the time of the study. This is different from previous report by Seleye-Fubara *et al.* where vaginal cancer constituted 4.36% of all gynaecological cancers.²³ Choriocarcinoma occurred in women at the peak of their reproductive careers, as it is a malignancy associated with pregnancy.¹⁴

Squamous cell carcinoma of the cervix was the most common histological type (91.1%), followed by adenosquamous carcinoma (6.7%). This is similar to reports from Bangladesh and other parts of Nigeria.^{1,14,17} About 85.2% of ovarian cancers were epithelial tumours, 11.1% germ cell tumours and 3.7% sex cord tumours. The epithelial tumours were mainly serous adenocarcinoma (91.3% of cases). The endometrial tumours were all adenocarcinoma similar to reports from Kano.¹⁴ There were three cases of myometrial tumours (leiomyosarcoma) and there were no recent reported cases in the literature published in the sub region. Hundred percent of the vulva cancers were squamous cell carcinoma and all the gestational trophoblastic disease were choriocarcinoma; the malignant variant.¹⁷

CONCLUSION

Cervical cancer is the most common gynaecological malignancy followed by ovarian and the endometrial cancers. No report of vagina or cancer of the fallopian tubes. Although cervical cancer is largely preventable its incidence is still very high in

our environment. There is need for continuous health awareness campaign on cervical cancer, prevention, vaccination for pre-pubertal girls, screening, early diagnosis and treatment. It is also important to subsidize the cost of care for cancer patients.

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