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Pattern of gynaecological malignancies in a Nigerian tertiary hospital

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The sociodemographic and histological patterns of gynaecological malignancies is important in their management. Facilities are now available for prevention, detection, treatment and palliative care for the wide spectrum of female genital tract malignancies. The study aim to determine the socio demographic and histological patterns of Gynaecological malignancies identified at the University of Abuja Teaching Hospital (UATH). This was a retrospective study carried out in the Obstetrics and Gynaecology department of the University of Abuja Teaching Hospital (UATH), Abuja, Nigeria between 1st January, 2012 and 31st December, 2016. The case notes of patients admitted for Gynaecological malignancy were retrieved from the medical records and studied for relative frequency, age distribution, parity and histological types of the Gynaecological malignancies. Out of 3786 women admitted during the study period, 113 had Gynaecological malignancies, giving an incidence of 3.0%. Majority of the women had cervical cancer (65.5%) followed by ovarian cancer (22.1%). Endometrial cancer, Choriocarcinoma, and vulva cancer accounted for 7.1, 4.4 and 0.9%, respectively. Squamous cell carcinoma accounted for 93.2% of cervical cancers. Epithelial tumours accounted for 84% of ovarian tumours, while adenocarcinoma accounted for 61.5% of cancers of the corpus uteri. The mean age for the various female genital cancers were: cervical cancer (52.6 ± 0.88 years), ovarian cancer (40.9± 1.68 years), vulva cancer (34.5 ± 0 years), choriocarcinoma (30.5 ± 1.44 years), and endometrial cancer (54.5 ± 1.77 years). Cervical cancer remains the most common female genital tract malignancy seen. The challenges with cervical cancer screening need to be addressed to reduce its incidence.

Key words: Gynaecological cancers, pattern, frequency, histology.

INTRODUCTION

Gynaecological cancers continue to be an important public health problem globally (Sanni et al., 2013; Yakasai et al., 2013). They are among the leading causes of morbidity and cancer-related deaths worldwide, with variation in the distribution and frequency from one region to the other (Sanni et al., 2013; Okeke et al., 2013; Agboeze et al., 2015). This is particularly so in the developing countries where there is poor awareness and late presentation (Sanni et al., 2013).

Approximately 1:4 of all cancers in women in

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developing countries (excluding non-melanoma skin cancer) is a Gynaecological cancer (Iyoke and Ugwu, 2013). Worldwide, Gynaecological cancers account for about 10% of new cancer cases in women and 12% of cancer deaths (Kyari et al., 2004). The proportion of cancers in females which are of genital tract origin range from as high as 31.6-35.0% in sub-Saharan Africa to as low as 12.7-13.4% in North America and other developed nations where health-seeking and organized screening methods have greatly improved (Yakasai et al., 2013; Franco and Franco, 2001).

Cervical cancer is the most common pelvic malignancy among women worldwide (Agboeze et al., 2015; Franco and Franco, 2001). In developed countries, the introduction of routine screening and treatment for premalignant lesions of the cervix has led to a dramatic fall in the incidence and mortality of cervical cancer over the past 5 decades (The Economist Intelligence Unit, 2009). In developing countries like Nigeria, there is poor uptake of routine cervical cancer screening resulting in late presentation and high rate of cervical cancer (The Economist Intelligence Unit, 2009; International Agency for Research on Cancer, 2012). About 80-95% of cervical cancers are squamous cell carcinoma (Sankaranarayanan and Ferlay, 2006). Carcinoma of the cervix has been reported in many series to be the commonest gynaecological cancer in developing countries, with most of the patients presenting late stages of the disease (Fader et al., 2009).

Ovarian cancer is the second most common female genital cancer and a major cause of death from female genital tract malignancies in developing countries (Sankaranarayanan and Ferlay, 2006). Over 80% of cases of ovarian cancer are epithelial in origin (Fader et al., 2009; Hennessy et al., 2009; Bast et al., 2009; Gubbels et al., 2010). About 75% of patients with ovarian cancer present in advanced stages of the disease due to lack of standard screening technique for early diagnosis of ovarian cancer and non-specific symptoms of the disease (Bast et al., 2009; Gubbels et al., 2010; Gabra and Blagden, 2012). It accounts for 18.8% of all Gynaecological cancers in developing countries and 28.7% in developed countries (Sankaranarayanan and Ferlay, 2006). The lower incidence of ovarian cancer in developing countries may be due to early marriage and high parity in these women as pregnancy and breastfeeding are known to protect against ovarian cancers (Gabra and Blagden, 2012).

Endometrial cancer is more common in developed countries than in developing countries, probably due to the relative longevity of women in developed countries (Fader et al., 2009; Gabra and Blagden, 2012). It is the third commonest Gynaecological cancer in developing countries (The Economist Intelligence Unit, 2009). More than 90% occur in women aged 50 years and above (Sankaranarayanan and Ferlay, 2006). It has a more favourable prognosis than ovarian and cervical cancers

with 5-year survival rates around 70% in developing countries (Sankaranarayanan and Ferlay, 2006).

Choriocarcinoma represents 0.6% of all gynaecological cancers (Sankaranarayanan and Ferlay, 2006). Incidence rates are highest in South East Asia where rates of 0.43-1.7/100 000 are quoted compared to 0.04/100 000 in Africa and Europe (Sankaranarayanan and Ferlay, 2006). Vulva and vaginal cancers are rare with peak incidence in the 6th decade of life (Sankaranarayanan and Ferlay, 2006; Mohyuddin et al., 2012). Age and parity affect the incidence of Gynaecological cancers. Endometrial and ovarian cancers occur mainly later in reproductive life, while carcinoma of the cervix and choriocarcinoma are seen commonly in pre-or perimenopausal women (Gabra and Blagden, 2012). Women of high parity have relatively low risk of developing endometrial cancer and ovarian cancer as pregnancy is known to be protective against ovarian cancer, while multiparity is associated with increased risk of development of cervical carcinoma (Gabra and Blagden, 2012). The aim of this study was to determine the sociodemographic characteristics the patients and histological patterns of Gynaecological malignancies seen at the University of Abuja Teaching Hospital (UATH). The findings in this study will be helpful in combating Gynaecological cancer menace through health education, screening programs, and appropriate resource allocation. This could have significant implications on health planning and policy decisions.

MATERIALS AND METHODS

The study covered a 5-year period, from 1st January, 2012 to 31st December, 2016 done at the University of Abuja Teaching Hospital. This facility is the only teaching hospital in Abuja, the Nigerian capital and serves as the major referral centre within the Federal Capital Territory and its environs. The case notes of all patients with Gynaecological cancers admitted into the Gynaecological ward within the study period were retrieved from the medical records department and studied for age and parity of the patients, the type and frequency of the malignancy as well as the histological diagnosis of the cancers using a proforma. The data were analysed using IBM Statistical Package for Social Sciences (SPSS) package version 20.0, August 2016 (SPSS 20.0, IBM, Armonk, NY, United States of America). Chi-square (χ2) test was employed to examine the significant association between variables where applicable and Multivariate analysis for cofounding factors. Statistical significance was set at 0.05. Ethical approval for the study was obtained from the ethics and research committee of UATH.

RESULTS

Out of the 3786 women admitted into the Gynaecological ward during the 5-year study period, 113 had Gynaecological cancers with histological diagnosis, giving an incidence of 3.0%.

Characteristics of the study sample

The age group from 50-59 has the highest number of

Table 1. Characteristics of the study sample.

Demographics	N	%
Age group		
< 30	8	7.1
30 – 39	21	18.6
40 – 49	25	22.1
50 – 59	32	28.3
≥60	27	23.9
Education level		
No formal education	47	41.6
Primary	31	27.4
Secondary	22	19.5
Tertiary	13	11.5
Occupation		
Housewife	25	22.1
Civil servant	14	12.4
Trader	24	21.1
Student	13	11.5
Others	37	32.7
Tribe		
Hausa	22	19.5
Igbo	36	31.9
Yoruba	21	18.6
Others	34	30.1
Religion		
Islam	41	36.3
Christianity	72	63.7
Parity		
0	9	8
1 – 4	34	30.1
≥ 5	70	61.9

patients with 28.3%, followed by age group ≥60 with 23.9%. On educational status of the patients, 41.6% has no formal education, 32.7% had unspecified occupation and Igbo has the highest number of patients with 31.9%, followed by others with 30.1%. Majority of the patients (63.7%) were Christians and majority (61.9%) were grand multiparous (Table 1). There were no association between sociodemographic factors and gynaecological cancers as seen in Table 2. The commonest gynaecological cancer in the study was cervical carcinoma, which constituted 74 (65.5%) of the cases, followed by ovarian cancer 25 (22.1%). Endometrial cancer accounted for 8 (7.1%), choriocarcinoma 5 (4.4%), while the least was vulva cancer 1 (0.9%). There was no case of vaginal cancer seen.

Age distribution of gynecological cancers

Cervical carcinoma rose sharply in occurrence from the 3rd decade of life, and remained the commonest cancer in all age groups. Ovarian cancer had a bimodal peak; among the 30-39 years and 40-49 years age groups. Women under 20 years of age constituted 2.7% of patients with Gynaecological cancers in this study and all were ovarian. The mean age for female genital cancers was highest for endometrial cancer (54.5 ± 1.77 years), followed by cervical cancer (52.6 ± 0.88 years), ovarian cancer (40.9±1.68 years), vulva cancer (34.5±0 years) and the least being choriocarcinoma (30.5 ± 1.44 years). There was strong association between age and development of Gynecological cancer in this study with p

Table 2. Multivariate logistic regression of socio-demographic factors and gynaecological cancers.

	Cervical	Ovarian	Others
Age group			
<30	Ref	Ref	Ref
30 – 39	4.50 (0.34 – 60.2)	0.16 (0.02 – 1.23)	1.20 (0.09 – 16.1)
40 – 49	7.68 (0.57 – 102.7)	0.16 (0.02 – 1.32)	1.56 (0.11 – 21.6)
50 – 59	23.3 (1.51 – 359.8)	0.07 (0.007 – 0.70)	5.69 (0.31 – 105.8)
≥ 60	6.50 (0.45 – 94.9)	0.08 (0.008 – 0.81)	3.05 (0.13 – 70.0)
Education			
No formal Education	Ref	Ref	Ref
Primary	2.55 (0.67 – 9.76)	0.50 (0.13 – 1.97)	0.33 (0.03 – 3.12)
Secondary	6.93 (1.32 – 3.63)	0.14 (0.02 – 1.11)	1.54 (0.21 – 11.1)
Tertiary	9.70 (1.03 – 91.6)	2.34 (0.47 – 11.7)	0.58 (0.04 – 7.94)
Occupation			
Housewife	Ref	Ref	1
Civil servant	0.16 (0.02 – 1.24)	0.26 (0.02 – 3.19)	5.16 (0.26 – 102.7)
Trader	0.54 (0.10 – 3.07)	1.01 (0.21 – 4.90)	7.48 (0.45 – 123.0)
Others	1.04 (0.23 – 4.57)	1.06 (0.27 – 4.17)	1.42 (0.10 – 20.4)
Tribe			
Hausa	Ref	Ref	Ref
Igbo	0.59 (0.10 – 3.31)	1.08 (0.19 6.19)	0.56 (0.06 – 5.45)
Yoruba	0.81 (0.12 – 5.41)	1.99 (0.33 – 12.1)	0.62 (0.05 – 8.14)
Others	0.52 (0.10 – 2.78)	2.43 (0.48 – 12.4)	1.60 (0.19 – 12.0)
Parity			
0	Ref	Ref	Ref
1 – 4	1.71 (0.23 – 12.6)	0.22 (0.04 – 1.35)	1.97 (0.22 – 17.5)
≥ 5	13.4 (1.69 – 105.6)	0.29 (0.05 – 1.72)	0.06 (0.003 – 0.93)

*Others include; endometrial, choriocarcinoma and vulva carcinomas
*Ref; The category used to compare other groups.

value < 0.002 as seen in Table 3.

Parity distribution of gynaecological cancers

The highest mean parity was in women with cervical cancer and the lowest in those with choriocarcinoma. Women with parity ≥5 had the highest occurrence of Gynaecological cancers (61.9%), of which cervical cancer occurred most commonly followed by ovarian cancer and the least being endometrial cancer. None had choriocarcinoma and vulva cancer (Table 4).

Site and histological pattern of gynaecological malignancies

Squamous cell carcinoma was the most common cancer of the cervix (93.2%). Adenocarcinoma accounted for the largest proportion of uterine cancers (61.5%), while epithelial tumours were the most common type of ovarian cancers (84%) with serous cystadenocarcinoma accounting for the largest proportion. The only case of vulva cancer was squamous cell carcinoma (Table 5).

DISCUSSION

In this study, Gynaecological cancers accounted for 3.0% of Gynaecological disease burden in UATH. This is comparable to the 2.8 (Nkyekyer, 2000) and 5.4% (Sanni et al., 2013) reported in Jos Nigeria and Ghana, respectively. However, lower than 8.4 (Agboeze et al., 2015), 10.1 (Okeke et al., 2013) and 11.5% (Yakasai et al., 2013) reported in Abakaliki, Enugu and Kano, respectively. The largest numbers of gynaecological

Table 3. Age distribution of gynaecological cancers.

Age (years)	Cervical	Ovarian	Endometrial	Choriocarcinoma	Vulva	Total (%)	Test
<20	0	3	0	0	0	3 (2.7%)	
20-29	1	2	0	2	0	5 (4.4%)	
30-39	10	7	0	3	1	21 (18.6%)	
40-49	16	7	2	0	0	25 (22.1%)	
50-59	27	1	4	0	0	32 (28.3%)	P=0.002
60-69	16	5	2	0	0	23 (20.4%)	
70-79	3	0	0	0		3 (2.7%)	
80-89	1	0	0	0	0	1 (0.9%)	
Total	74	25	8	5	1	113 (100%)	
Mean (SD)	52.6±0.88	40.9±1.68	54.5±1.77	30.5±1.44	34.5±0		

Table 4. Parity distribution of gynaecological cancers.

Parity	Cervical	Ovarian	Endometrial	Choriocarcinoma	Vulva	Total (%)	Test
0	2	5	0	2	0	9 (8.0%)	
1-4	14	10	6	3	1	34 (30.1%)	
≥5	58	10	2	0	0	70 (61.9%)	P=0.27
Total	74	25	8	5	1	113 (100%)	
Mean	5.5±0.09	3.6±0.19	3.5±0.59	1.5±0.36	2.5±0		

cancers occurred in the 30-69 year age group and is comparable to reports from Abakaliki, Ghana and Enugu (Agboeze et al., 2015; Nkyekyer, 2000; Nwankwo et al., 2011).

Cervical cancer constituted 65.5% of the female genital cancers in this study. This is consistent with results from a similar study in Benin (62.9%)(Okoye, 2014) and Enugu (65.8%)(Nwankwo et al., 2011). It is however slightly higher than the reports from Abakaliki (60.6%)(Agboeze et al., 2015), Ilorin (59.6%)(Ibrahim and Ijaiya, 2013) and Kano (48.6%)(Yakasai et al., 2013) but lower than Zaria (77.0%)(Oguntayo et al., 2011) and Jos (74.9%)(Sanni et al., 2013). This probably may be due to the fact that Abuja as Federal capital is inhabitable by different ethnicity. Squamous cell carcinoma constituted 93.2% of cervical cancer burden in this study, followed by adenosquamous carcinoma (4.1%) and then adenocarcinoma (2.7%). This is similar to the reports from other centres in Nigeria (Sanni et al., 2013; Yakasai et al., 2013; Okeke et al., 2013; Agboeze et al., 2015; Iyoke and Ugwu, 2013; Kyari et al., 2004).

The mean age at presentation of cervical cancer was 52.6 ± 0.88 years. Comparable findings were documented in Enugu (55.0 years) and Benin (51.5 years)(Nwankwo et al., 2011; Okoye, 2014). This study showed that cervical cancer remains the most common Gynaecological cancer in our environment and it is supported by studies done in other regions of Nigeria and Ghana (Nkyekyer, 2000; Nwankwo et al., 2011; Okoye,

2014). The reason for this may be because of early marriage, high parity and poor knowledge as well as uptake of cervical cancer screening among the women in this region (The Economist Intelligence Unit, 2009; International Agency for Research on Cancer, 2012). It may also be due to the fact that there are very few centres across the country with facilities for cervical cancer screening compared to the teeming population of women who need to access this service (The Economist Intelligence Unit, 2009; International Agency for Research on Cancer, 2012). Where routine cervical cancer screening is practiced, the incidence of invasive cervical cancer will decline (The Economist Intelligence Unit, 2009).

Ovarian cancer was the second most common female genital cancer in this study; accounting for 22.1% of the cases. This is comparable to reports from Enugu (21.1%)(Okeke et al., 2013) and Ilorin (21.1%)(Ibrahim and Ijaiya, 2013) but higher than reports from Abakaliki (19.2%)[4] and Jos (15.3%)(Sanni et al., 2013). The most common ovarian cancer in this study is the epithelial type, of which serous cystadenocarcinoma is the commonest variety. This is similar to findings from other centres in Nigeria (Sanni et al., 2013; Yakasai et al., 2013; Okeke et al., 2013; Agboeze et al., 2015). The rising incidence of ovarian cancer in this study may be due to late marriage and a reduction in the family size of most families, as pregnancy and breast feeding are known to protect against ovarian cancers (Gabra and

Table 5. Site and histological pattern of gynaecological malignancies.

Histological type	Frequency	Percentage
Cervix		
Squamous cell carcinoma	69	93.2
Adenocarcinoma	3	4.1
Adenosquamous carcinoma	2	2.7
Total	74	100
Corpus Uteri		
Adenocarcinoma	8	61.5
Choriocarcinoma	5	38.5
Total	13	100
Vulva		
Squamous cell carcinoma	1	100
Total	1	100
Ovarian		
Epithelial tumour		
Serous cystadenocarcinoma	16	64
Mucinous cystadenocarcinoma	4	16
Fibrosarcoma	1	4
Germ cell tumour		
Embryonal carcinoma	1	4
Sex cord stromal tumours		
Malignant granulosa cell tumour	3	12
Total	25	100

Blagden, 2012).

Endometrial carcinoma accounted for 7.1% and the third most common Gynaecological cancer in this study. It occurred more commonly than choriocarcinoma, which accounted for 4.4%. This finding is consistent with the reports from studies done in Jos, Kano, Enugu and Abakaliki, but different from that reported in Ilorin, Nigeria; where choriocarcinoma was found to be common than endometrial cancer (Sanni et al., 2013; Yakasai et al., 2013; Okeke et al., 2013; Agboeze et al., 2015; Ibrahim and Ijaiya, 2013). This study showed that choriocarcinoma is relatively a disease of younger women and may be so because the disease is associated with pregnancy; hence, it is more likely to occur in active reproductive life (Agboeze et al., 2015). Vulva carcinoma was the least common Gynaecological malignancy in this study, accounting for only 0.9% of female genital cancers. This is comparable to the report of a similar study in Jos (1.4%) (Sanni et al., 2013), but lower than 2.21, 3.6, and 4.3% reported in Kano, Ilorin and Enugu, respectively (Yakasai et al., 2013; Ibrahim and Ijaiya, 2013; Nwankwo et al., 2011).

Conclusion

Cervical carcinoma is the most common gynaecological malignancy and squamous cell carcinoma is the commonest histological type seen. More emphasis needs to be placed on education and public enlightenment for routine screening and treatment of premalignant lesions of the female genital tract. Facilities for screening, regular gynaecological examinations and well-defined follow-up surveillance system can change the rising trend of female genital malignancies.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

Agboeze J, Ezeonu PO, Onoh RC, Nwali MI, Agwu MR, Egbuji CC (2015). Frequency and Pattern of Gynecological Cancers in Federal Teaching Hospital, Abakaliki, Nigeria. Journal of Basic and Clinical Reproductive Sciences 4(2):54-57.

Bast RC, Hennessy B, Mills GB (2009). The biology of ovarian cancer: New opportunities for translation. Nature Reviews Cancer 9:415-428.

Fader AN, Arriba LN, Frasure HE, von Gruenigen VE (2009). Endometrial Cancer and Obesity: Epidemiology, Biomarkers, Prevention and Survivorship. Gynecologic Oncology 114:121-127.

Franco EL, Franco ED, Ferenczy A (2001). Cervical cancer: Epidemiology, prevention and the role of human papiloma virus infection. CMAJ 164:1017-1025.

Gabra H, Blagden S (2012). Epithelial Ovarian Cancer. In: Dewhurst's Textbook of Obstetrics and Gynaecology for Postgraduate. Edmonds DK. (Ed) 8th edition. London: John Wiley and Sons Ltd; pp. 760-775.

Gubbels JA, Claussen N, Kapur AK, Connor JP, Patankar MS (2010). The detection, treatment, and biology of epithelial ovarian cancer. Journal of Ovarian Research 3:8.

Hennessy BT, Coleman RL, Markman M (2009). Ovarian cancer. Lancet 374:1371-1382.

Ibrahim HM, Ijaiya MA (2013). Pattern of gynaecological malignancies at the University of Ilorin Teaching Hospital, Ilorin, Nigeria. Journal of Obstetrics and Gynaecology 33(2): 194-196.

International Agency for Research on Cancer. GLOBOCAN 2008 Fast stats. Available from: http: //www.globocan.iarc.fr/. Accessed: April 24, 2012.

Iyoke CA, Ugwu GO (2013). Burden of gynaecological cancers in developing countries. World Journal of Obstetrics and Gynaecology 2(1):1-7.

Kyari O, Nggada H, Mairiga A (2004). Malignant tumours of female genital tract in North Eastern Nigeria. East African Medical Journal 81: 142-145.

Mohyuddin S, Sultana N, Butt KA, Mohyuddin A (2012). Patterns of Gynaecological Malignancies at a Tertiary Care Hospital. Pakistan Journal of Medical and Health Sciences 6(47):1-6.

Nkyekyer K (2000). Pttern of gynecological cancers in Ghana. East African Medical Journal 77:534-538.

Nwankwo KC, Okafor OC, Ezegwui H (2011). Pattern of Female Genital Tract Malignancy in University of Nigeria Teaching Hospital Enugu. International Journal of Medicine and Health Development 6(1):1-6.

Oguntayo O, Zayyan M, Kolawole A, Adewuyi S, Ismail H, Koledade K (2011). Cancer of the cervix in Zaria, Northern Nigeria. Ecancermedicalscience 5(219):1-20.

Okeke TC, Onah N, Ikeako LC, Ezenyeaku CCT (2013). The Frequency and Pattern of Female Genital Tract Malignancies at the University of Nigeria Teaching Hospital, Enugu, Nigeria. Annals of Medical and Health Science Research 3(3):345-348.

Okoye CA (2014). Histopathological Pattern of Cervical Cancer in Benin City, Nigeria. The Journal of Medical Investigation Practice 9:147-150.

Sankaranarayanan R, Ferlay J (2006). Worldwide burden of gynaecological cancer: The size of the problem. Best Practice and Research Clinical Obstetrics and Gynaecology 20: 207-225.

Sanni WO, Ocheke AN, Oyebode T, Jonah M, Nyango DD, Silas OA, Sagay AS (2013). Pattern of Gynaecological Malignancies in Jos. Tropical Journal of Obstetrics and Gynaecology 30(1):97-102.

The Economist Intelligence Unit (2009). Breakaway: The global burden of cancer-challenges and opportunities. The Economist Intelligence Unit Limited, pp. 1-73.

Yakasai IA, Ugwa EA, Otubu J (2013). Gynecological malignancies in Aminu Kano Teaching Hospital Kano: A 3-year review. Nigerian Journal of Clinical Practice 16(1):63-66.