

A Five-Year Review of Female Genital Tract Malignancies at The University of Maiduguri Teaching Hospital, Maiduguri, Nigeria

Hadiza A. Usman¹, Bala M. Audu¹, Mohammed Bukar¹, Ahmed Mayun², Ibrahim M. Sanusi¹

ABSTRACT

Background: The burden of female genital tract malignancies is of public health concern worldwide. Determining the prevalence will help in policy formulations and priority setting for disease prevention and management in health institutions in Northeast Nigeria.

Objectives: To determine the frequency, trend and age pattern of female genital cancers in a referral tertiary health facility in Northeast Nigeria.

Methods: A retrospective descriptive analysis of histologically confirmed cancers of the female genital tract managed at the University of Maiduguri Teaching hospital for the period 1st January, 2011 to 31st December, 2015.

Results: Female genital tract malignancies constituted 32% of all female cancers and 7% of gynaecological admission in this study. Cervical cancer was the most common gynaecological malignancy constituting 59.3 % (n=128) followed by ovarian cancer (n=46; 21.3%). Other genital tract malignancies seen include uterine cancer (n=22; 10.2%; majority of which were endometrial cancer (n=19; 8.8%) while uterine sarcoma constituted 3(1.4%). Choriocarcinoma and vulva cancers contributed 7% (n=15) and 1.4% (n=3) respectively. While cervical cancer was on the decrease, ovarian cancer showed a rising trend during the period under review. The age range for all gynaecological cancers was 18 to 85 years and the mean age (SD) was 43.8 (\pm 14.5) years. The mean age (SD) for cervical cancer was 51.5(\pm 12.1). A third of the cervical cancer cases were 20-39 years old. Choriocarcinoma is commoner in younger age groups with a mean age (SD) of 26.6(\pm 8.0). Vulva and vaginal cancers are least common and occurred in those greater than 60years.

Conclusions: Thirty two per cent of all female cancers were of female genital tract and cervical cancer was still the common female genital tract cancer in this facility. The high prevalence of cervical cancer and increasing trend of ovarian cancer calls for awareness campaign and targeted population screening program for female genital cancer in this region.

KEYWORDS: Female, genital cancers, Gynecological cancer, malignancies, Northeast Nigeria.

¹Department of Obstetrics and Gynaecology, University of Maiduguri Teaching Hospital, Maiduguri, Borno State, Nigeria

²Department of Pathology, University of Maiduguri teaching hospital, Maiduguri, Borno state, Nigeria

Correspondence to:

Dr. Hadiza Abdullahi Usman,

Department of Obstetrics and Gynaecology, University of Maiduguri Teaching Hospital, Maiduguri, Borno State, Nigeria

eMail:- adiusman@yahoo.co.uk

Introduction

The burden of cancer is a global challenge and constitutes a public health issue. Of the seven most common cancer incidences and mortalities in females reported in 2012, 3 were of the female genital tract¹. Cervical cancer ranked as the fourth with an estimated 528,000 new cases and ovarian cancer the seventh with nearly 239,000 cases in 2012¹. The prevalence and burden of female genital tract cancer in developing countries is huge with approximately 1:4 of all cancers in women in developing countries (excluding



non-melanoma skin cancer) being gynaecological cancers². In Nigeria, female cancers are twice as more as male cancers. Cervical cancer is the commonest female genital cancer with an estimate of 32.9 per 100,000 women³. Gynaecological cancers account for 10-15% of all cancers and cervical cancer is the commonest female genital cancer in India⁴. In developed countries, the burden of cervical cancer and mortality from the disease has been reduced by 85% and cervical cancer is now the 4th most common cancer in women in the United states of America and the 7th in Europe compared to the less developed region where it is the second commonest and the 3rd leading cause of cancer mortality in women in these regions^{5,1}. This wide variations between and within countries are due to lack of organized screening program for the most common female genital cancer in low and middle income countries in addition to ignorance and lack of awareness^{6,7}. Female genital cancers - namely cancer of the cervix, ovary, corpus uteri (endometrial cancer and uterine sarcomas), choriocarcinoma, vaginal, vulva and fallopian tube cancers are associated with reproductive, hormonal, genetic, environmental, socio-economic and dietary risk factors⁸. Reports from various regions of Nigeria have consistently shown cervical cancer to be more than 50% of female genital cancers. The reported prevalence ranged from 51.6 % in Sagamu, 59.6% from Ilorin, 60.6% from Abakaliki, 70.5% from Maiduguri to as high as 78% in Enugu⁹⁻¹³.

The incidence of ovarian cancer is higher in developed world than less developed world. The rates was 7.5 per 100,000 women in developed world and below 5 per 100,000 in less developed world. The risk of dying from ovarian cancer before the age of 75 years is twice in developed than less developed world¹. In the United States of America, the life time risk of developing ovarian cancer is 1.3¹⁴. Ovarian cancer is the second most common gynaecological cancer reported

from most part of Nigeria except for report from Sokoto were choriocarcinoma was the second followed by ovarian cancer^{13,15,16,17}. The incidence and prevalence of other female genital cancers varies within the different geopolitical zones of Nigeria. Vaginal and vulva cancers are the least common female genital cancers in Nigeria^{10,12,13&17}.

There has been migration of people from the rural area to Maiduguri metropolis as a result of the recent insecurity posed by "Boko haram" insurgency¹⁸. This has epidemiological effect on all diseases including cancer incidences. The last review of gynaecological malignancies at the University of Maiduguri Teaching Hospital was in the year 2000. There is therefore the need to review the trend in gynaecological malignancies and compare with the trend in the last 15 years. This will help in planning and priority setting for disease prevention and management in the area.

Materials and Methods

This was a retrospective descriptive analysis of histologically confirmed cancers of the female genital tract managed at the University of Maiduguri Teaching hospital for the period 1st January, 2011 to 31st December, 2015. The University of Maiduguri Teaching Hospital is a tertiary health center located in Maiduguri, Northeast Nigeria. The histopathology department has the only cancer registry in the Northeastern Nigeria and receives specimens from the various departments in the hospital, the surrounding government and private hospitals in the state and the surrounding states. All histologically confirmed cases of cancers are registered in the cancer registry in the department. Information on the type of cancer, the histological sub-type, and the age of the patients and the year of presentation were retrieved from the histopathology cancer registry, the hospital theater records and the gynaecology ward admission and discharge records. Data generated were entered into the



study preformed proforma, cleaned and analyzed using IBM SPSS version 20.0 (Armonk, NY: IBM Corp.). Results are presented in simple percentages, means and tables. The study was approved by the institutional ethical committee.

Results

There were 677 female cancers during the five year period (2011-2015); 216 (32%) of which were from the female genital tract. Female genital tract malignancies were responsible for 7% of the 3061 gynaecological admissions during the study period. Cervical cancer was the most common gynaecological malignancy constituting 59.3 % (n=128) followed by ovarian cancer (n=46; 21.3%). Other genital tract malignancies seen included uterine cancer (n=22; 10.2%; majority of which were endometrial cancer (n=19; 8.8%) while uterine sarcoma constituted 3(1.4%). Choriocarcinoma and vulva cancers contributed 7% (n=15) and 1.4% (n=3) respectively. The least common genital tract cancer was vaginal cancer (n=2; 0.9%). This is presented in table 1. The age range for all gynaecological cancers was 18 to 85 years and the mean age (SD) was 43.8±14.5 years. The mean age (SD) for cervical cancer was 51.5±12.years. The only case of cervical cancer in a teenager was an 18 year old with clear cell carcinoma, however, a 3rd of them were in their active reproductive age of 20-39 years.

Majority of the ovarian (39.1%) and endometrial (58%) cancers were in their 4th and 5th decades of life with a mean (SD) of 50.2 ± 16.3years and 55± 10.8years respectively. Choriocarcinoma was commoner in younger women with a mean age of 26.6± 8.0years and eighty percent of them were in their 2nd and 3rd decades of life. This is depicted in table 2. The most common histological variant of cervical cancer seen during this review was Squamous cell carcinoma accounting for 86.4 % while adenocarcinoma was seen in 5.8% of cases. Epithelial ovarian cancer was the commonest ovarian cancer seen in 85.3% of cases in this center.

All the cases of corpus uteri cancers in this study were leiomyosarcoma while all the vaginal cancers were squamous cells in origin .One of the vulva cancers was a metastatic cancer; the others were squamous cell in origin. There was decline in the rate of female genital tract cancers from it 2011 ratio of 35.6% (n=78) of all female cancers to 23.1% (n=27) and 24.8% (n=30) in 2012 and 2013 respectively. However, this was not sustained. The decline was followed in the subsequent years by sudden rise to 39.3% (n=48) and 33.7% (n=33) in 2014 and 2015 despite the generally low trend of female cancers in the center in those years. Figure 1 shows the trend over the 5 year period.

Table 1. Sites of female genital tract malignancies in Maiduguri, Northeast Nigeria

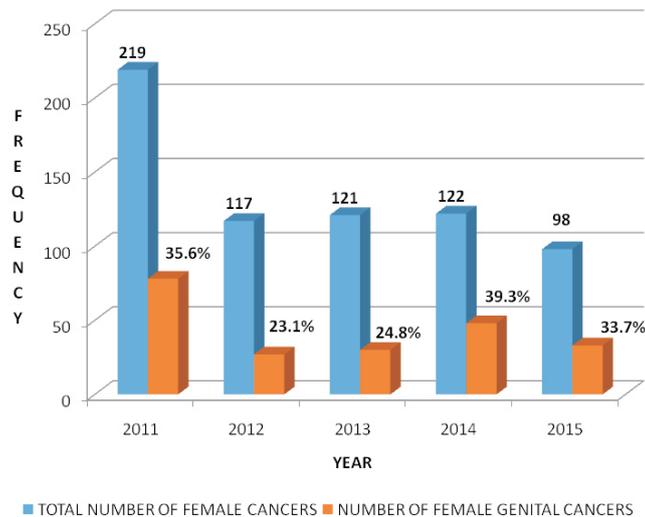
Type of genital cancer	Number	Percentage (%)
Cervical	128	59.2
Ovarian	46	21.3
Endometrial	19	8.8
Choriocarcinoma	15	7.0
Uterine corpus	3	1.4
Vulva	3	1.4
Vagina	2	0.9
Total	216	100



Table 2. Age distribution of the most common gynecologic cancers in Maiduguri, Northeast Nigeria

Parameter	Cervical cancer	Ovarian cancer	Endometrial	Choriocarcinoma
Age				
<19	1	2	0	1
20-39	38	10	1	12
40-59	66	18	11	2
60-79	20	14	7	0
≥80	3	2	0	0
Mean(SD)	51.5(12.1)	50.2(16.3)	55(10.8)	26.6(8.0)
Total	128	46	19	15

Fig.1 TRENDS IN FEMALE GENITAL CANCER



Discussion

The burden of gynaecological cancers is still high in this region. Gynaecological malignancies declined from 43.6% of all female cancer in the last review by Kyari et al¹² to 32% of all female cancers in this review. This decline may not be a true representation considering the insecurity in the area which affected service delivery in the last 5 years. This is reflected in the lower total number of all cases of female cancers seen during this period compared with the last review. However, the rising trend in female genital cancers observed in the year 2014 and 2015 could be due to the fact that this center was the

only functioning health facility during the peak of the insecurity in the area were patients were referred for treatment. It could also be explained by the increase number of internally displaced persons in Maiduguri metropolis during the period.

Gynaecological malignancies constituted 7 % of all gynaecological admissions. Although this is low when compared with 11.5% reported from Kano in the same Northern Nigeria¹⁹, it is well above the 2.8% of gynaecological admissions reported by Nkyekyer from Ghana.²⁰ Reports from other



parts of Nigeria have shown that gynaecological cancers were responsible for 8.4% to 8.7% of all gynaecological admissions^{11,9}.

Cervical cancer is still the commonest female genital tract malignancy in this center. The 59.3% in this review is lower than 70.5% reported earlier in this center¹². This decline may be the result of increased awareness and opportunistic screening of our obstetrics and gynaecology patients in the last 10 years. Colposcopy is now done in our oncology unit and for the first time, cases of micro-invasion are diagnosed. However, the target populations are still being missed out as most of the cervical cancer cases present to our facility with advance disease.

Cervical cancer has persistently remained the leading gynaecological cancer in Nigeria and it is responsible for greater than 50% of female genital tract cancers in almost all the hospital-based reports^{10, 12, 15, 16&21}. While the life time risk of developing cervical cancer is 1: 115 women in developed world, a woman in low and middle income country like Nigeria has a 50% risk of developing cancer of the cervix with higher mortality than her counterpart in developed world²². The commonest histological variant in this study was squamous cell carcinoma in 86.4% of cases. This is in agreement with studies from other parts of Nigeria were Anunobi et al²³ from Sagamu reported 82.2%, however, our finding is lower than 96.0% reported by Ibrahim et al¹⁰ from Ilorin, Nigeria. The opportunistic screening for cervical cancer practiced in most facilities in Nigeria is unlikely to reverse the current high incidence of cervical cancer in the nearest future. There is therefore an urgent need for policy on cervical cancer prevention in Nigeria.

Ovarian cancer was the second commonest cancer in this review. The rate for the period under review was 21.3%. This is higher than 16.3% earlier reported in this center¹². This

increase may not be real as most of the state government and private hospitals that previously absorb some of these cases were closed during the peak of the insecurity in the Northeast. It could be as a result of socio-demographic change in lifestyle typical of industrialized countries as it was observed in the general rising trend in cancers in developing countries¹. Except for report by Nnadi et al¹⁷ from Sokoto, Northwest Nigeria where choriocarcinoma was reported as the second commonest gynaecological cancer, the finding in this study is comparable with reports from other parts of Nigeria where ovarian cancer remained the second most common gynaecological cancer^{12,13,15,19,21&23}. In a study by Manzoor et al from Pakistan²⁴, ovarian cancer is the most common gynaecological cancer followed by cervical cancer. In our study, the 21.3% reported is higher than 8.2% reported by Okunade et al¹⁶ but similar to the findings from Ilorin and Enugu^{10&13}.

The prevalence of endometrial cancer and choriocarcinoma were closely similar constituting 8.8% and 7.0% respectively. This is lower than 11.25% of endometrial cancer and 9.24% of choriocarcinoma reported by Yakasai et al¹⁹. Vaginal cancer is the least common cancer in this center constituting 0.9%. Cancer of the vulva and vagina are rare, constituting 3% and less than 2% of gynecological cancers worldwide²⁵. The age range for gynaecological cancers in this review was 18 to 85 years. The 18 year old had clear cell cervical adenocarcinoma, a rare disease common in paediatrics and adolescent patient exposed to diethylstilbestrol (DES) in utero. It can also occur sporadically in non DES exposed²⁶. The mean age (SD) of all gynaecological cancer in this review has not changed from the last review¹². The mean age for cervical cancer was similar to the report by Nkyekyer²⁰ from Ghana. Choriocarcinoma was commoner in younger women with a mean age of 26.6 ± 8.0 and eighty percent of them were in their 2nd



and 3rd decade of life. This is in keeping with the fact that the disease is related to peak reproductive age. Vaginal cancer primarily occurs in women older than 60 years of age with a mean age of 68 years from USA study²⁷. The two cases reported in this review were 58 and 65 years old.

Conclusion

Cervical cancer is a preventable disease but still the leading female genital tract

malignancy in this facility. Ovarian cancer was on the increase in this facility. With reported cervical smear rate of 1.3% from a tertiary health facility in Northern Nigeria where cervical cancer is high²⁹ and disease burden of over 50% of cases of female genital tract cancers in almost all hospital-based reports from Nigeria, there is an urgent need for targeted population based screening for cervical cancer if the trend is to be reversed in Nigeria.

References

1. Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, et al. GLOBOCAN 2012 v1.0, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: <http://globocan.iarc.fr>, accessed on 6/12/2017.
2. Iyoke CA, Ugwu GO. Burden of gynaecological cancers in developing countries. *World J Obstet Gynecol* 2013; 2(1):1-7.
3. Jedy-Agba E, Curado MP, Ogunbiyi O, Oga E, Fabowale T, Igbinoba F, et al. Cancer incidence in Nigeria: A report from population-based cancer registries. *Cancer Epidemiol.* 2012; 36 (5):e271-e278.
4. Basile S, Angioli R, Mancini N, Palaia I, Plotti F, Benedetti Panici P. Gynecological cancers in developing countries: The challenges of chemotherapy in low resource setting. *Int J Gynecol Cancer.* 2006; 16:1491-7.
5. Denny L. Cervical cancer prevention and treatment in low-resource settings. In: Heleen VB, Unkels R, editors. *A Textbook of Gynecology for Less-Resourced Locations*. London: Sapiens Pub; 2012. pp. 317-36.
6. Ngugi CW, Boga H, Muigai AW, Wanzala P, Mbithi JN. Factors affecting uptake of cervical cancer early detection measures among women in Thika, Kenya. *Health Care Women Int.* 2012; 33:595-613.
7. World Health Organization. Geneva: WHO; 2006. *Comprehensive cancer control: A guide to essential practice*.
8. Weiderpass E, Labrèche F. Malignant Tumors of the Female Reproductive System. *Safety and Health at Work*, 2012; 3(3),166-180.
9. Adefuye PO, Adefuye BO, Oluwole AA. Female genital tract cancers in Sagamu, southwest, Nigeria. *East Afr Med J.* 2014; 19(11):398-406.
10. Ibrahim HM, Ijaiya MA. Pattern of gynaecological malignancies at the University of Ilorin Teaching Hospital, Ilorin, Nigeria. *J Obstet Gynaecol.* 2013; 33(2):194-6.
11. Joseph A, Olisaemeka EP, Chukwudi OR, Igwe NM, Rose AM. Frequency and Pattern of Gynecological Cancers in Federal Teaching Hospital Abakaliki, Nigeria. *J of Basic Clin Reprod Sci* 2015;4: 54-7.
12. Kyari O, Nggada H, Mairiga A. Malignant tumors of female genital tract in North Eastern Nigeria. *East Afr Med J.* 2004; 81:142-5.
13. Okeke TC, Onah N, Ikeako LC, Ezenyeaku CCT. The frequency and pattern of female genital tract malignancy at the University of Nigeria Teaching Hospital, Enugu, Nigeria. *Ann Med Health Sci Res.* 2013; 3(3):345-348.
14. National cancer Institute surveillance,



- epidemiology and end result program. Available at: <http://seer.cancer.gov>. Accessed: 3rd December, 2017
15. Sanni WO, Ocheke AN, Oyeboode T, et al. Pattern of gynaecological malignancies in Jos. *Trop J Obstet Gynaecol*. 2013;30(1):97-101.
 16. Okunade KS, Okunola H, Okunowo AA, Anorlu RI. A five year review of ovarian cancer at a tertiary institution in Lagos, South-West, Nigeria. *Niger J Gen Pract* 2016;14:23-7
 17. Nnadi D, Singh S, Ahmed Y, Siddique S, Bilal S. Histo-pathological features of genital tract malignancies as seen in a tertiary health center in north western Nigeria: A 10 year review. *Ann Med Health Sci Res*. 2014; 4:213-217.
 18. IOM/NEMA, (October, 2015). Displacement Tracking Matrix (Dtm) Round Vi Report. (Idps). Abuja: IOM Nigeria. Available at: <https://data2.unhcr.org/fr/documents/download/48737> Accessed: 6/12/2017
 19. Yakasai I A, Ugwa E A, Otubu J. Gynecological malignancies in Aminu Kano Teaching Hospital Kano: A 3 year review. *Niger J ClinPract* 2013;16:63-6
 20. Nkyekyer K. Pattern of gynecological cancers in Ghana. *East Afr Med J* 2000; 77: 534-8.
 21. Umanah IN, Ugiagbe EE, Olu-Eddo AN. Female genital malignancies in a Niger Delta Region of Nigeria. *Ibom Med J*. 2013;6(1):23-28.
 22. Fitzmaurice C, Allen C, Barber RA, Barregard L, Bhutta ZA, Brenner H et al: Global Burden of disease cancer collaboration: Global, regional and national cancer incidence, mortality, years of life lost, years lived with disability, and disability-adjusted life-years for 32 cancer groups, 1990 to 2015: A systemic analysis of the global burden of disease. *JAMA Oncol*. 2017;3(4):524-548.
 23. Anunobi CC, Jagun OE, Agboola AO, Akintola PA, AnduBA. Clinico-pathological study of female genital malignancies in Olabisi Onabanjo University Teaching Hospital, Sagamu, Ogun State, Nigeria. *West Afr J Med*. 2014; 33(1):7-11.
 24. Manzoor H, Naheed H, Ahmad K, Iftihar S, Asif M, Shuja J, et al. Pattern of gynaecological malignancies in south western region of Pakistan: An overview of 12 years. *Biomedical Reports*. 2017;7(5):487-491.
 25. Sankaranarayanan R, Ferlay J. Worldwide burden of gynaecological cancer: The size of the problem. *Best Pract Res ClinObstetGynaecol*. 2006; 20:207-225.
 26. Jiang X, Jin Y, Li Y, et al. Clear cell carcinoma of the uterine cervix: clinical characteristics and feasibility of fertility-preserving treatment. *OncoTargets and therapy*. 2014; 7:111-116.
 27. Wu X, Matanoski G, Chen VW, et al. Descriptive epidemiology of vaginal cancer incidence and survival by race, ethnicity, and age in the United States. *Cancer*. 2008; 113(15) 10 Suppl: 2873-82.
 28. Oguntayo OA, Zayyan M, Akpa M, Kolawole OA. The burden of Gynaecological Cancer Management in northern Nigeria. *Open J ObstetGynaecol*. 2013;3: 634-638.
 29. Nnadi DC, Nwobodo EI, Airede LR, Arkilla M, Sahabi S. Screening for cervical cancer: Experience from a University Hospital in North western Nigeria. *J Basic ClinReprod Sci*. 2013; 2:18-21.

Cite this article as: Hadiza A. Usman, Bala M. Audu, Mohammed Bukar, Ahmed Mayun, Ibrahim M. Sanusi. A Five Year Review of Female Genital Tract Malignancies at the University of Maiduguri Teaching Hospital, Maiduguri, Nigeria. **Bo Med J** 2017;14(2): 152 - 158. **Source of Support:** Nil, **Conflict of Interest:** None declared.

