Research Article

Pattern of Gynecological Cancers in Aminu Kano Teaching Hospital

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Abstract

Background: Gynecological cancers remain one of the leading causes of cancer related deaths, a study of the pattern of presentation is needed to reduce the incidence and improve the prognosis.

Objective: To determine the period prevalence, pattern and influence of age and parity on the relative frequencies, and stage at presentation of gynecological cancers at Aminu Kano Teaching Hospital, Kano, Nigeria.

Methods: A retrospective analysis of all cases of gynecological cancers that were managed between January 2006 and December 2010.

Results: The period prevalence for gynecological cancers in this study was 11.7%. Cervical cancer (58.1%) was the commonest gynecological cancer, and was significantly associated with women in the reproductive age group (P<0.001) and high parity (P<0.001), while ovarian cancer and was significantly associated with post-reproductive age group (P<0.001) and low parity (P<0.001). All the cases of choriocarcinoma occurred among the women in reproductive age group and low parity (P<0.001), while endometrial cancer was significantly associated with post-reproductive age group (P = 0.002) and low parity (P=0.031). All the cases of vulval carcinoma occurred among women in post-reproductive age group, but did not show significant association with parity (P=1.000). Majority of the women with gynecological cancers presented with late stage of the disease (P < 0.001).

Conclusion: Cervical cancer remains the most common gynecological cancer diagnosis at Aminu Kano Teaching Hospital. Majority of the women presented with late stage of the disease.

Key words:

Gynecological cancers; Incidence; Pattern; Age; Parity

Introduction

Gynecological cancers are important health problem in sub-Saharan Africa, where gynecological cancers are the leading cause of years-of-life lost in women, resulting in a greater reduction in a women's life expectancy than HIV/AIDS or Tuberculosis, because of high prevalence of low literacy level, poor health seeking behavior and

medical budgets, and inefficient preventive and intervention programs [1-6].

Studies from developing countries have shown that cervical cancer remains the commonest gynaecological cancer over the past three decades [7-10], probably because the possible aetiological factors of cancer of the cervix, which are sexually transmitted diseases, of which HPV serotypes 16 and 18 are currently implicated [11-13], are common in resource poor countries, and gynaecological cancer screening programs have been ineffective because of lack of funding, poor access to rural areas where most of the population in developing countries reside, lack of awareness/education on the importance of screening, insufficient facilities and poor utilization, and follow-up [14].

Late stage presentation with advanced disease is a feature of gynaecological cancers in developing countries [8], and has been attributed to poor health seeking behaviour of the populace, because of high prevalence of low literacy and poverty, as well as scantily available and poorly equipped and manned screening and diagnostic facilities, as a result of poor governmental health policies and budgets [7-9]. In developed countries, because of good governmental health policies and budgets, availability of well equipped and manned health facilities, as well as screening programs, high literacy and socio-economic levels and female empowerment, which encourage good health seeking behaviour, early stage presentation are common [1,11-13].

The pattern of gynecological cancers have not been reviewed in our hospital over the past decade, and it is against this background that this study was designed, to determine the period prevalence, relative frequencies of the various gynecological cancers, influence of age and parity of the patients on the prevalence, and stage at presentation of gynecological cancers at Aminu Kano Teaching Hospital, and to make recommendations which will guide policies on prevention, early diagnosis and management of gynecological cancers in our hospital.

Methods

This is a retrospective study of cases of gynecological cancers that were managed at the gynecological oncology unit of Aminu Kano Teaching Hospital, from January 2006 to December 2010, to determine the period prevalence, the relative frequencies of the various gynecological cancers, the influence of age and parity of the patients on the prevalence, and stage at presentation of gynecological cancers.

The sources of the data were the gynecological clinic attendance register, ward admission and discharge books and operating theatre record books. The case notes of the patients were retrieved from the medical records, and the outcome measures were age, parity, type of cancer and stage at presentation among the women with gynecological cancers. All the women had surgery with histological confirmation of the cases, except for cases of Choriocarcinoma that were diagnosed based on clinical examination and biochemical tests.

The women were divided into reproductive age group, which was taken as women that were between 15 and 49 years of age, and post-reproductive age group, who were those more than 49 years of age. They were also divided into the low parity group, who were those with less than five previous deliveries, and high parity group, who were those with five or more previous deliveries. The division of the patients into reproductive and post-reproductive age group, and low and high parity was based on the Federal Ministry of Health and National

Population Fertility classification in Nigeria [15]. Early stage at presentation were cases that presented with either stage I or II disease, while late stage at presentation were cases that presented with either stage III or IV disease.

The data obtained were recorded using tables, and analyzed using EPI-INFO Version 8.0. Qualitative data were recorded using frequencies and percentages, quantitative data were recorded using mean and standard deviation. Statistical test of significant difference was done using chi square test for categorical variables. A P-value of less than 0.05 was considered significant.

Results

During the study period, there were 451 cases of gynecological cancers and 5276 total gynecological consultations, giving a period prevalence of 11.7% of all gynecological consultations for gynecological cancers in Aminu Kano Teaching Hospital. Of the 451 cases of gynecological cancers, only 441 case notes were retrieved from the medical records unit, giving a retrieval rate of 97.8%. The age range of the women was 21- 78 years, with mean age of 44.3 ± 6.4 years, and mean parity of 5.4 ± 3.1.

Cervical cancer was the commonest gynecological cancer, constituting 58.1% of all the cases, followed by ovarian cancer (23.6%), choriocarcinoma (16.6%), endometrial cancer (1.4%) and vulva cancer (0.5%). There was no case of vaginal cancer during the study period.

Table 1 shows the influence of age on frequency of each of the various cancers. Cancer of the cervix was significantly associated with women in reproductive age group (P<0.001), while ovarian cancer was significantly associated with among women in the post-reproductive age group (P<0.001). There was no case of ovarian malignancy among the pre-pubescent age group during the study period. All the cases of endometrial and vulval carcinomas occurred among the women in post-reproductive age group. Women with gynecological cancer were significantly more among women in the reproductive age group (P<0.001).

Type of cancer	Reproductive age group	Post-reproductive age group	Total n (%)	Test	P-value
Cervix	159	97	256 (58.1)	Chi-square = 2.69	< 0.001*
Ovary	31	73	104 (23.6)	Chi-square = 0.18	< 0.001**
Endometrium	-	6	6 (1.4)	Fisher exact	0.002**
Choriocarcinoma	73	-	73 (16.6)	Chi-square = 142.03	< 0.001*
Vulva	-	2	2 (0.5)	Fisher exact	0.333
Total	**263**	**178**	**441**	**Chi-square = 32.00**	**<0.001***
Mean			**44.3 ±6.4**	-	
*Significant for reproductive age					
**Significant post-reproductive age					

Table 1: Influence of age on frequency of each of the various cancers

Table 2 shows the influence of parity on frequency of each of the various cancers. Cancer of the cervix was significantly associated with high parity (P<0.001), while ovarian cancer (P<0.001), Endometrial cancer (P=0.02) and Choriocarcinoma (P<0.001) were significantly associated with low parity. Vulval carcinoma did not show significant association with any of the parity groups (P=1.000). There was no significant difference in the occurrence of gynecological cancers between the two groups (P=0.281).

Type of cancer	Low parity	High parity	Total n (%)	Test	P-value
Cervix	79	177	256 (58.1)	Chi-square = 73.51	< 0.001**
Ovary	91	13	104 (23.6)	Chi-square= 114.02	< 0.001*
Endometrium	6	-	6 (1.4)	Fisher exact	0.002*
Choriocarcinoma	52	21	73 (16.6)	Chi-square= 24.66.	< 0.001*
Vulva	1	1	2 (0.5)	Fisher exact	1.000
Total	**229**	**212**	**441**	**Chi-square = 1.16.**	**0.281**
Mean			**5.4 ± 3.1**		
*Significant for low parity					
**Significant for high parity					

Table 2: Influence of parity on frequency of each of the various cancers

Table 3 shows stage at presentation of the various gynecological cancers. Majority of the patients with gynecological cancers were significantly associated with late stage presentation (P<0.001). Cervical (P<0.001) and ovarian (P<0.001) cancers were significantly associated

with late stage presentation, while choriocarcinoma (P<0.001) was significantly associated with early stage presentation. All the cases of endometrial and vulval cancers were associated with early stage presentation.

Type of cancer	Early stage Presentation	Late stage Presentation	Total n (%)	Test	P-value
Cervix	37	219	256 (58.1)	Chi-square = 255.95	< 0.001**
Ovary	3	101	104 (23.6)	Chi-square = 180.94	< 0.001**
Endometrium	6	-	6 (1.4)	Fisher	0.002*
Choriocarcinoma	72	1	73 (16.6)	Chi-square = 134.25	< 0.001*
Vulva	2	-	2 (0.5)	Fisher	0.333
Total	180	261	441	Chi-square = 29.02.	< 0.001**

*Significant for early stage presentation

**Significant for late stage presentation

Table 3: Stage at presentation of the various gynecological cancers

Discussion

Gynecological cancers accounted for 11.7 % of all gynecological consultations in this study, which is similar to 14.0% that was reported from Sokoto [16], a community with similar socio-cultural and religious background, and same geographical area in North western Nigeria, but is higher than 2.8% that was reported from Korle Bu in southern Ghana [8]. Also, the mean age at presentation of 44.3 years in this study, is similar to 44.0 years and 44.2 years that were reported from Sokoto [16] in North western Nigeria, and Maiduguri [5] in North eastern Nigeria, but is lower than 54.6% that was reported from Enugu in South eastern Nigeria [2]. These may emphasize the relationship between gynecological cancers and socio-cultural practices and environmental carcinogens in a geographical area [17,18].

Cervical cancer was the most common gynecological cancer diagnosis, followed ovarian, choriocarcinoma and endometrial cancer in this study, and other studies from developing countries [5-10], but does not agree with studies from developed countries where ovarian cancer is the most common gynecological cancer diagnosis, followed by endometrial and cervical cancer [11-13]. This may be because cervical cancer retains its character as a venereal disease, that is prevalent in resource poor countries, where poverty makes the women to breach the moral values that are given to them, and cervical cancer screening programs are still inefficient, since its introduction in the 1980s in developing countries [9,13], unlike in resource rich developed countries, where extensive and effective cervical cancer screening programs and preventive strategies that was commenced in 1970s, has resulted in the down regulation in the incidence of cervical cancer, to the third commonest gynaecological cancer [11-13,19].

The European Age Standardized Rates (EASR) per 100,000 populations in Wales, shows a general decrease in the incidence of cervical cancer over the periods, from approximately 4.5 per 100,000 population in 1995-1997 to approximately 3 per 100,000 population in 2002-2004 [11]. In sub-Saharan countries, there is the absence of population based studies, which makes the accurate figures to be difficult to ascertain, and reliance has to be made on hospital based studies [2-6]. Introduction of vaccines against oncogenic strains of human papillomavirus (HPV) types 16 and 18, which will hopefully reduce the incidence of cervical cancer globally, by preventing initiation of carcinogenesis [20], will be a welcome idea, especially in developing countries where the risk factors like early marriage and high parity, and HPV and Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome infections are common [8,9].

Ovarian cancer is the most common gynecological cancer diagnosis among women in developed countries [11,12,22], and is significantly associated with late stage presentation in this study, and other studies worldwide [7-12,22], because it is a hidden cancer, and the cost-benefit implications of community screening investigation tools to detect it at an early stage, like serial bimanual pelvic examinations, ultrasound/Computerize Tomography (CT) scan and Magnetic Resonance Imaginig (MRI), and CA125 estimation has not been rewarding [22]. Endometrial cancer, which is common in the seventh and eighth decades of life, is the second most common gynecological cancer diagnosis in developed countries [11], because of the longer life expectancy among the women in developed countries, compared with developing countries where the life expectancy is between 35-50 years [15].

Cervical cancer occurred significantly more among women of reproductive age group, which agrees with the findings from Maiduguri [5], a community with similar socio-cultural practice of early girl marriage, but did not agree with findings from Port Harcourt [10] where women delay marriage. This may be because early girl marriage which refers to any form of marriage that takes place before a girl child has reached 18 years [21], is common in our community in North western/eastern Nigeria, and forces the young girls to have sex with their older spouse who are likely to be sexually experienced, and may expose the females to infection with oncogenic strains of Human Papilloma Virus before sexual maturation is achieved, a period which the immature cervical epithelium are more vulnerable to cellular mutation [13,18].

The significant association between cervical cancer and high parity in this study, agrees with other studies [2-9], and has been attributed to the aetiological relationship between cervical cancer and venereal diseases, which are common among women with low literacy levels and from the low socioeconomic class, among whom high parity is common.

Ovarian cancer, endometrial and vulval cancers occurred significantly more among women in post-reproductive age group, which agrees with other studies worldwide [7-12]. This may be because they are cancers that are slow growing, and have a longer

latency period following initiation, and slow progression following promotion before the eventual development of cancer [18]. All the cases of choriocarcinoma occurred among women in the reproductive age group, which agrees with other studies [5-10], and may probably be because it is a disease of the placenta, which is associated with pregnancy and reproduction [8,9], and is rapid growing with early haematogenous spread.

The association between low parity and endometrial and ovarian cancer in this study agrees with the findings of other studies [8-12]. This may be because endometrial carcinoma is associated with conditions like dysfunctional uterine bleeding and polycystic ovary syndrome, and ovarian cancer is associated with incessant ovulation which are associated with infertility or low parity [11,12,15].

Majority of the women with gynecological cancers presented with late stage of the disease, probably because cancer of the cervix and ovary which constituted over 80% of the cases are associated with late stage presentation. This agrees with the findings of other studies from developing countries [2-4], and has been attributed to poor health seeking behaviour of the women [8,9], who first seek traditional cure or spiritual intervention in spiritual homes, before seeking orthodox medical care in the hospital [21].

Early stage presentation was significantly associated with endometrial cancer and choriocarcinoma in this study, which agrees with the findings of other studies [2-9], and has been attributed to heavy bleeding per vaginam in the early stage of these conditions, which usually make them to seek orthodox health care because of complications of severe anaemia, like weakness, dizziness, shock and collapse [8]. Early stage presentation which was significantly associated with vulval carcinoma in this study, agrees with other studies [2,9], and has been attributed to presence of visible vulval ulcers with bloody/purulent discharge in the early stage of this condition, that may be unacceptable and make them to present early [18].

Conclusion and Recommendations

Gynecological cancers constituted 11.7% of all gynecological consultations, and cervical cancer remains the most common cancer diagnosis among the women with gynecological cancers in Aminu Kano Teaching Hospital. Gynecological cancers occurred with higher frequency among the women in the reproductive age group, but did not show significant association with any parity group. Majority of the women with gynecological cancers presented with late stage of the disease.

Establishment of cancer society and community support groups, backed by governmental and non-governmental organizations, to carry out community education and awareness on the importance of community gynecological cancer screening, and to establish effective, accessible and affordable community gynecological cancer screening and preventive strategies, as well as intervention programs, is needed in developing countries like Nigeria, to improve the health seeking behavior of its populace, the acceptance and utilization of the available screening facilities, and reduce the incidence and encourage early stage at presentation of gynecological cancers. Improvements in female literacy and socio-economic status, which will make the women to avail themselves of the available cancer screening and treatment facilities should be encouraged. Cancer registry should be established in the community, so that the magnitude of the problem can be appreciated, and research and interventions can be put in place, to

down regulate the prevalence of gynecological cancers, improve treatment modalities and the prognosis, and offer our women good quality of life.

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