East African Medical Journal Vol. 77 No. 10 October 2000
PATTERN OF GYNAECOLOGICAL CANCERS IN GHANA
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ABSTRACT

Objective: **To determine the relative frequencies of gynaecological cancers in Ghana, age and parity distribution, stage of disease at presentation and the influence of age and parity on stage at presentation.**
Design: **Retrospective observational study.**
Setting: **Korle Bu Teaching Hospital, Accra, Ghana.**
Subjects: **Cases of gynaecological cancers seen in a fifty two month period.**
Results: **Cervical cancer was the commonest, constituting about 57.8% of gynaecological cancers. Ovarian cancer, endometrial cancer, choriocarcinoma and vulval carcinoma followed in that order. The mean age and parity for cervical carcinoma (52.0[SD12.0] years, 5.8[SD2.7] respectively) were significantly higher than those for ovarian carcinoma (46.4[SD15.0] years, 3.5[SD3.0] respectively) but not significantly different from those for endometrial carcinoma (56.0[SD13.5] years, 5.4[SD3.0] respectively). Most patients with cervical or ovarian carcinoma presented with advanced disease while most with endometrial carcinoma presented with early stage disease. Age and parity did not have any influence on the stage at presentation with cervical or ovarian carcinoma. Concerning endometrial carcinoma, although age did not influence stage at presentation, women of high parity (≥5) presented with earlier stage disease than those of parity less than 5.**
Conclusion: **As a first step towards reducing the morbidity and mortality associated with gynaecological cancers in Ghana, appropriate steps must be taken to reduce the incidence of cervical carcinoma. In addition, detailed study of the epidemiology of cervical and endometrial cancers in Ghanaian women is needed to determine whether they share any other common antecedents in addition to age and parity.**

INTRODUCTION

Gynaecological cancers continue to be important health problems worldwide. The proportion of cancers in the female which are of genital tract origin range from 31.6% to 35.0% in sub-Saharan Africa, 12.7% to 13.4% in North America, 13.9% to 16.8% in France and the Scandinavian countries, 15.5% to 43.1% in South America and 22.4% to 55.8% in India(1).

One major problem in developing countries, and especially in sub-Saharan Africa, is the absence of accurate population and health statistics. It is therefore not possible to reliably calculate incidence rates for the various cancers. In such circumstances therefore, reliance has to be placed on relative frequencies in hospitals as a measure of tumour incidence.

While in developed countries endometrial carcinoma is the commonest gynaecological cancer, in African countries carcinoma of the cervix has been reported in many series to be the commonest, with most of the patients presenting in late stages of the disease(1-4).

Age and parity are known to affect the incidence of gynaecological cancers. Endometrial carcinoma is reported to be predominantly a disease of ageing, postmenopausal women, the peak incidence being in the 58-60 years group. It occurs later in reproductive life than carcinoma of the cervix which is seen commonly in premenopausal or perimenopausal women(5). Women of high parity have relatively low risk of developing endometrial cancer; pregnancy also protects against ovarian cancer(6). In sharp contrast, however, multiparity is associated with increased risk of development of cervical carcinoma(6).

The purpose of this retrospective study, conducted at the Korle Bu Teaching Hospital, was to determine the relative frequencies of the various gynaecological cancers, age and parity distribution, the stage of disease at presentation and the influence, if any, of age and parity.

Korle Bu Teaching Hospital is the biggest hospital and the major referral centre in Ghana. It is situated in the nation's capital, Accra and serves as the teaching hospital for the University of Ghana Medical School. Patients with gynaecological cancer are referred to the Obstetrics and Gynaecology department of the hospital from all parts of the country. Until late 1997 there were no facilities for radiation therapy and women with advanced cancer who needed radiation therapy had to travel abroad for treatment if they had the means to do so.

MATERIALS AND METHODS

The study was originally intended to cover the period from January 1991 to December 1996. The sources of clinical data were the ward admission and discharge books and the operating theatre record books. The data sources for the period July 1993 to February 1995 could not be traced so the actual period covered was January 1991 to June 1993 and March 1995 to December 1996 (ie a period of 52 months). From these data sources the age, parity, type of cancer and stage of disease were noted for each patient admitted with gynaecological cancer. Where the patient had surgery the above information was confirmed by comparison with information in the operating theatre record books. Almost all the patients had had histologically proven gynaecological carcinoma, though details of histological diagnosis were not included in this study. Some cases of choriocarcinoma had been diagnosed on clinical and biochemical grounds.

The data were fed into and analysis performed by personal computer using Epi-Info version 6. Statistical analysis was performed using Student "t" test for continuous and Chi square test for categorical variables; where numbers were small the Fisher exact two-tailed test was used. Differences were considered significant if $p<0.05$.

RESULTS

During the period of study there were 498 women admitted to the gynaecological unit with gynaecological cancers. The total number of patients admitted to the unit during the same period was 17,822. Thus 2.8% of the admissions were for gynaecological cancers.

Relative frequencies of gynaecological cancers: The commonest gynaecological cancer was cervical carcinoma, which constituted almost 58% of the cases(Table 1). Vaginal cancer and leiomyosarcoma of the body of the uterus were rare.

Table 1

Relative frequencies of gynaecological cancers

Type of cancer	No. (%)
Cervix	288 (57.83)
Ovary	126 (25.30)
Endometrium	37 (7.43)
Choriocarcinoma	34 (6.83)
Vulva	11 (2.21)
Vagina	1 (0.20)
Leiomyosarcoma	1 (0.20)
Total	498 (100)

Age distribution (Table 2): The largest numbers of gynaecological cancers occurred in the fifth to seventh decades of life; 70.2% of the cancers occurred in these age groups. The commonest gynaecological cancers in women under 30 years of age were ovarian cancer (52.2%) and choriocarcinoma (41.5%); cervical and endometrial cancers were rare in this age group and none had vulval or vaginal carcinoma. The highest mean age was in women with endometrial cancer while the lowest was in those with choriocarcinoma; indeed 50% of women with choriocarcinoma were less than thirty years old. Cervical carcinoma rose sharply in occurrence from the fourth decade of life, and remained the commonest cancer in all age groups from thirty years onwards. The mean age of women with cervical carcinoma was not significantly different from that of those who had endometrial carcinoma ($p=0.064$), but it was significantly higher than that of women with ovarian cancer ($p<0.001$).

Table 2

Age distribution of gynaecological cancers

Age(yrs)	No. of patients and type of cancer						
	Cervix	Ovary	Endometrium	Choriocarcinoma	Vulva	Vagina	Total
<30	1	21	2	17	0	0	41
30-39	39	12	1	10	1	1	64
40-49	81	29	6	7	4	0	127
50-59	83	39	11	0	4	0	137
60-69	51	20	10	0	1	0	82
≥70	31	5	6	0	1	0	43
Not stated	2	-	1	–	–	–	3
Total	288	126	37	34	11	1	497
Range	26-85	10-74	21-76	16-49	36-70	–	
Mean	52.0	46.4	56.0	30.6	49.3	–	
(SD)	(12.0)	(15.0)	(13.5)	(8.4)	(11.1)		

The age of the woman with leiomyosarcoma was not stated in the data sources.

Table 3

Parity distribution of gynaecological cancers

Parity	No. of patients amd type of cancer						
	Cervix	Ovary	Endometrium	Choriocarcinoma	Vulva	Vagina	Total
0	3	22	2	9	0	1	37
1-4	86	56	11	16	5	0	174
5-8	128	31	13	6	4	0	182
9+	50	8	5	1	2	0	66
Not stated	21	9	6	2	0	0	38
Total	288	126	37	34	11	1	497
Mean	5.8	3.5	5.4	2.5	5.4	–	–
(SD)	(2.7)	(3.0)	(3.0)	(2.7)	(3.0)		

The woman with leiomyosarcoma had parity of four.

Parity distribution(Table 3): The highest mean parity was in women with cervical cancer and the lowest in those with choriocarcinoma. At least 48.6% (18 out of 37) of women with endometrial cancer were of parity 5 or higher. There was no significant difference in parity between women who had cervical and those who had endometrial carcinomas (p=0.44), but the mean parity for cervical cancer was significantly higher than that for ovarian cancer (p<0.001).

Stage at presentation and influence of age and parity (Table 4): Of the women who had cervical cancer, 87(30.2%) presented with stage IB, 15(5.5%) with stage IIA and 171(64.3%) with stage IIB or worse disease. In other words only 35.7% of affected women presented with a stage of disease that could be treated in Ghana (by radical surgery) during the period under study. Age and parity did not seem to influence the stage at presentation (Table 4a).

Table 4

Stage at presentation in relation to age and parity

(a) Cervical cancer

Age (yrs)	Stage at presentation		p value
	IB - IIA	IIB - IV	
<40	16	24	χ2=0.38
≥40	86	160	p=0.54
Parity			
<5	36	53	χ2=1.17
≥5	60	118	p=0.28

b) Ovarian cancer

Age(yrs)	Stage at presentation		p value
	I -II	III - IV	
<40	6	27	χ2=0.99
≥40	25	68	p=0.32
Parity			
<5	19	59	χ2=0.02
≥5	10	29	p=0.88

c) Endometrial carcinoma

Age (yrs)	Stage at presentation		p value
	I-II	III-IV	
<50	6	3	
≥50	21	6	p=0.66*
Parity			
<5	7	6	
≥5	17	1	p=0.012*

*Fisher two-tailed exact test

With regards to the women with ovarian cancer, 15(11.9%) presented in stage I, 16(12.7%) in stage II, 33(26.2%) in stage III and 62(49.2%) in stage IV. Here too, age and parity did not influence stage of disease at presentation (Table 4b).

In the endometrial cancer cases, 27(73%) presented with stage I, 1(2.7%) with stage II, 2(5.4%) with stage III and 7(18.9%) with stage IV disease. Although age did not influence the stage at presentation, women with high parity (five and above) presented with earlier stage disease than those with parity less than five (Table 4c).

Those with vulval cancer presented with stage I disease in 3(27.3%), stage II in 3(27.3%) and stages III and IV in 5(45.5%) cases. The numbers are too small to allow any reliable conclusions to be drawn as regards the effect of age or parity on stage of disease at presentation.

DISCUSSION

Gynaecological cancers formed 2.8% of all gynaecological admissions. This is low compared to 4.18-4.7% in Nigeria(2,7). The largest numbers, 70.2%, of gynaecological cancers occurring in the 40-69 year group is comparable to 72.2% reported from Port Harcourt(2).

Cervical cancer being the commonest gynaecological cancer is consistent with what has been reported in other parts of sub-Saharan Africa. The proportion it forms in this series (57.8%), however, is one of the lowest reported since within the region the proportion has ranged between 62.8% and 87.3%(1-4,7,8).

The position of ovarian cancer as the second commonest gynaecological cancer is similar to what has been reported from Zaria, Port Harcourt, (both in Nigeria), Tanzania and Harare(Zimbabwe). The proportion it forms in this series, 25.3%, is comparable to the 22.2% and 23.5% in Tanzania and Zaria respectively, though it is much higher than the 9.6% reported from Harare and the 12.3% from Port Harcourt(2,3,7,8).

In most reports from sub-Saharan Africa choriocarcinoma is more common than endometrial carcinoma(2,3,7,8); in this series the latter is slightly more common. Vulval carcinoma has been the least common, as shown in this report, while vaginal carcinoma has been very rare.

The mean age at presentation of 52 years in those with cervical cancer differs from the much lower mean ages of between 42 and 47 years reported from other parts of Africa(3,4,7,8). In spite of this higher mean age, the mean parity of 5.8 is comparable to the 5-7+ quoted in the above mentioned reports. It is not too clear why there is this difference in mean ages. Considering the risk factors for cervical carcinoma, it is plausible to suggest that Ghanaian women might start sexual activity at a later age than women from other parts of Africa; however, the evidence indicates that there is no difference(9-12).

The higher mean age and parity at presentation of women with cervical cancer compared to those with ovarian cancer is consistent with what has been reported elsewhere(2,3). However, when compared to women who had endometrial cancer, women with cervical cancer did not differ significantly with respect to age and parity. This is very much contrary to the generally accepted view that women with endometrial cancer are older and of lower parity than those with cervical cancer. It will be useful to determine whether in Ghanaian women carcinoma of the cervix and carcinoma of the endometrium share some other common epidemiological antecedents.

Many reports have confirmed the situation in the region in which most women with cervical carcinoma present with advanced disease. The proportion of women with early stage disease(IB-IIA) has been as low as 13.3% in Zaria(Nigeria) and 19% in Zimbabwe; a figure of 34.5% has been reported from South Africa(7,13,14). It is obvious that in Korle Bu Teaching Hospital a greater proportion of women present with early stage disease than in other parts of Africa. This may be due to patients reporting their symptoms earlier. However, 35.7% with early stage disease is too low when compared with developed countries where most of the patients present with early stage disease. The absence of any effect of age on stage at presentation with cervical carcinoma is consistent with some reports from the region but not with others (14, 15).

It is a recognised phenomenon worldwide that most women with ovarian cancers present with advanced disease. This is amply demonstrated in this report in which 75.4% presented with stage III or IV disease, which is comparable to 79.5% in Zimbabwe(3).

This series also shows consistency with the general observation of early stage at presentation with endometrial carcinoma; 75.7% of patients were in that category. Considering the high mean parity of women with endometrial carcinoma and the fact that women of high parity have significantly higher proportion of early stage disease than those of low parity, it may be suggested that in Ghanaian women pregnancy does not so much protect against endometrial carcinoma as it does against the development of aggressive forms of the disease.

The mean age for vulval carcinoma, 49.3 years, is rather low when one considers the fact that even early invasive carcinoma of the vulva is known to be most common in the late fifties and early sixties. Indeed, in the series from Zimbabwe all but one of 31 patients with vulval carcinoma were older than 55 years(3). It may be mentioned, however, that a mean age of 43.8 years was reported from Jamaica about thirty years ago(16) and the two patients with vulval carcinoma in the Port Harcourt series were in the 40-49 years group(2).

Choriocarcinoma in Ghana is a disease of relatively younger women. This is not surprising since, being a disease associated with pregnancy, it is more likely to occur in active reproductive life.

In conclusion, cervical carcinoma is the commonest gynaecological cancer in Ghana, with most patients presenting with advanced disease. It is obvious that if the morbidity and mortality associated with gynaecological cancers are to be reduced then cervical cancers must be the first to be tackled. Fortunately, cervical cancer is largely a preventable disease. There is the need to educate the public on the risk factors, as well as the early symptoms of the disease, so that people will adopt appropriate behaviour. More importantly, there is the need to begin to take concrete steps towards establishing a cervical cancer screening programme. It is generally acknowledged that in developing countries, of which Ghana is one, cervical smear cytology screening is not a viable proposition considering the economic constraints. However there is evidence that in lower source settings visual inspection after acetic acid application may be a reliable method of screening for precancerous cervical lesions(17). If this is confirmed in ongoing studies serious consideration must be given to its adoption in Ghana.

There is also the need for detailed study of the epidemiology of cervical and endometrial cancers in Ghanaian women to determine whether they share other common antecedents in addition to age and parity, since if these exist, they would have implications for public education on and the prevention of both cancers.

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