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FEMALE GENITAL TRACT CANCERS IN SAGAMU, SOUTHWEST, NIGERIA

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P. O. ADEFUYE, B. O. ADEFUYE and A. A. OLUWOLE

ABSTRACT

Objective: To describe pattern of female genital tract cancers seen at Olabisi Onabanjo University Teaching Hospital (OOUTH), Sagamu, Nigeria.

Design: This is a retrospective review of all cases of female genital tract cancers managed at the Gynaecology department of OOUTH, Sagamu, Nigeria.

Setting: OOUTH is a tertiary health institution of the State's university and it takes referrals from within and outside the State.

Subjects: Case records of all female genital tract cancers managed between January 2004 and December 2013 were retrieved and analysed using SPSS version 16.0.

Results: There were 2059 women treated for various gynaecologic conditions, 179 (8.7%) were cases of female genital tract cancers and 161 records were available for analysis. Cervical cancer constituted the commonest (51.6%), followed by ovarian (35.4%), endometrial (9.9%), and choriocarcinoma (1.9%). There were no cases of vaginal and fallopian tube cancers. The lowest mean age was found in choriocarcinoma (36.60±4.50 years) and highest in vulvar cancer (70.00±2.82 years). The mean ages for cervical, endometrial and ovarian cancers were (51.98±12.39), (65.38±7.24), and (54.42±10.51) years respectively. Similarly the least mean parity was found in choriocarcinoma (2.33±1.52), and the highest in vulvar cancer (6.00±1.44). The mean parity for cervical, endometrial, and ovarian were (4.10±1.49), (3.06±1.48), and (3.72±1.68) respectively. These differences are statistically significant, age; $F=7.61$, $p<0.0001$, and parity; $F=3.27$, $p=0.013$.

Conclusion: Incidence of cervical, endometrial, and ovarian cancers remain high and presentations are at late stages. There is a need to improve on cervical cancer screening, and for the attending physicians to improve on their indices of suspicions as regards endometrial and ovarian cancers.

INTRODUCTION

In 2012 it was estimated that there would be annual incidence of 14.1 million new cancer cases in both men and women worldwide and that women would share 47.3% of this burden(1). Similarly annual incidence of cancer cases in women was estimated to be over 6.6 million and female genital tract cancers constituted 1.1 million (16.7%) of the burden(1,2). Cancers of the female genital tract, namely cervix, endometrium or corpus uteri, ovary, vulva, fallopian tubes, and gestational trophoblastic cancers (choriocarcinoma and placental site trophoblastic tumours) are important causes of cancer morbidity and mortality in women worldwide(3). While cancers of the vulva, vagina, fallopian tubes and choriocarcinoma are very

rare, cancers of the cervix, endometrium and ovary account largely for cancer morbidity and mortality in women (4,5).

Globally, and in Nigeria, the incidence of female genital tract cancers have been on the increase since the past decade and a half, cervical cancer that is the 3rd most common cancer in women remains the commonest genital tract malignancy, and current global estimations are 527624 new cases and 265653 deaths annually (1,2,5,6,7). This global increase in incidence of female genital tract cancers are probably as a result of increased awareness rather than actual increase in number, particularly now in the less developed countries. (3)

In our practice, as in other less developed countries, women with genital tract cancers report very late for medical care due to ignorance and

poverty (4,7). In addition screening services are still non-existent, or at best few and opportunistic (8,9).

The aim of this study was to describe the pattern and frequency of different types of female genital cancers, age, parity, histological diagnoses, treatment and outcome of management that were managed at the gynaecological department of Olabisi Onabanjo University Teaching Hospital, Sagamu, Nigeria.

MATERIALS AND METHODS

Case records of all cases of histologically confirmed cancers of the female genital organs managed in the gynecological department between 1st January, 2004 and 31st December 2013 were retrieved from Medical records department and data on socio-demographic status, age, parity, mode of presentation, clinical and histological diagnoses, mode of treatment and outcome were collated using a proforma and analysed. Additional information, when necessary, was obtained from the gynecological ward, operating room and morbid anatomy records.

Data were analysed using statistical package for the social sciences (SPSS) version 16.0. Statistical analysis was performed using chi-square test for categorical variables and the two-tailed t-test for

continuous variables. One-sample t-test was used in comparing means with known means from population records or data. One-way analysis of variance was used to evaluate the difference in the means of multiple variables. The results are presented as means, standard deviation, and range; or as frequency and percentages, and p-value <0.05 was considered significant.

Olabisi Onabanjo University Teaching Hospital, Sagamu, is a tertiary health institution that takes referrals from other neighbouring government and private health institutions in Ogun State. The hospital also takes referrals from health institutions in the neighbouring towns of Lagos, Oyo and Ondo States that share borders with it.

RESLUTS

Between January 2004 and December 2013, 2059 women were admitted and managed for various gynaecological disorders, 179 (8.7%) were cases of various gynaecologic cancers. One hundred and sixty-one case notes were retrieved for analysis. The ages of the women ranged between 32 and 82 years and the mean was 54.11 (± 12.10) years. The parity ranged from 0 and 8 and the mean parity was 3.85 (± 1.60).

Table 1

Socio-demographic characteristics of women treated for genital tract cancers at Olabisi Onabanjo University Teaching Hospital, Sagamu between January 2004 and December 2013

Variable	Frequency	Percentage (%)
Age (n=161)		
≤10	0	0.0
11 - 20	0	0.0
21 - 30	0	0.0
31 - 40	26	16.1
41 - 50	42	26.1
51 - 60	51	31.7
61 - 70	17	10.6
71 - 80	21	13.0
81 - 90	4	2.5
≥91	0	0.0
Parity (n=161)		
0 - 2	42	26.1
3 - 5	99	61.5
≥ 6	22	12.4
Marital status (161)		
Single/Never married	3	1.9
Married/Living together	112	69.6
Separated/Divorced	2	1.2

Widow	25	15.5
Not stated	19	11.8
Educational status (161)		
Nil education	36	22.4
Primary school	34	21.1
Secondary school	59	36.6
Post-secondary school	20	12.4
Tertiary education	9	5.6
Not stated	3	1.9
Religion (n=161)		
Christianity	118	73.3
Islam	29	18.0
Traditional Religion	9	5.6
Not stated	5	3.1
Tribe (n=161)		
Yoruba	140	87.0
Igbo	5	3.1
Hausa	2	1.2
Southern minority	2	1.2
Northern minority	3	1.9
Not stated	9	5.6

Table 2

Frequency distribution of types of female genital tract cancer their and mean age and parity at presentation at the Olabisi Onabanjo University Teaching Hospital, Sagamu between January 2004 and December 2013

Variable	Type of cancer	Frequency	Percentage (%)	Mean (\pm SD)	Range
Age (in years)	Vulvar cancer	2	1.2	70.00(\pm 2.82)	68 - 72
	Vaginal cancer	0	0.0	0.0	0.0
	Cervical cancer	83	51.6	51.98(\pm 2.39)	36 - 82
	Endometrial cancer	16	9.9	65.38(\pm 7.24)	53 - 76
	Ovarian cancer	57	35.4	54.42(\pm 10.51)	34 - 75
	Fallopian tube cancer	0	0.0	0.0	0.0
	Choriocarcinoma	3	1.9	36.6(\pm 4.50)	32 - 41
		161	100.0	54.11(\pm 12.10)	32 - 82
Parity	Vulvar cancer	2	1.2	6.00(\pm 1.41)	5 - 7
	Vaginal cancer	0	0.0	0.0	0
	Cervical cancer	83	51.6	4.10(\pm 1.49)	1 - 8
	Endometrial cancer	16	9.9	3.06(\pm 1.48)	1 - 5

Ovarian cancer	57	35.4	3.72(±1.68)	0 - 7
Fallopian tube cancer	0	0.0	0.0	0
Choriocarcinoma	3	1.9	2.33(±1.52)	1 - 4
	161	100.0	3.85(±1.60)	0 - 8

Table 1 demonstrates the socio-demographic characteristics of women treated for genital tract cancers at the OOUTH Sagamu. Twenty-six (16.1%) of the women were aged 40 years and below, 134 (68.4%) were aged between 40 and 70 years, and 25 (15.5%) were above 70 years.

Forty-two (26.1%) women had 2 or less parous experience, 99 (61.5%) had 3 to 5 parous experience, and 20 (12.4%) were grandmultiparae.

Majority of the women, 112 (69.6%), were either married or living with their spouses. Three (1.9%) were either never married or single, 25 (15.5%) were widows, and 2 (1.2%) were either separated or divorced. Marital status were not noted in 19 (11.8%) of the women.

Eighty-eight (54.6%) of the women had at least secondary school and 36 (22.4%) had no formal education.

Other socio-demographic characteristics of religion and tribes are as noted in the table.

Table 2 shows frequency of occurrences of female genital tract cancers and their mean age and parity at presentation at OOUTH Sagamu, Nigeria between January 2004 and December 2013. Cervical cancer was the commonest female genital cancers 83 (51.6%), followed by ovarian 57 (35.4%) and then endometrial / uterine corpus 16 (9.9%). There were 2 (1.2%) cases of vulvar cancer and 3(1.9%) choriocarcinoma. There was no case of vaginal and fallopian tube cancers.

Figure 1
Pie chart showing percentage distribution of female genital tract cancers managed at the Olabisi Onabanjo University Teaching Hospital, Sagamu between January 2004 and December 2013

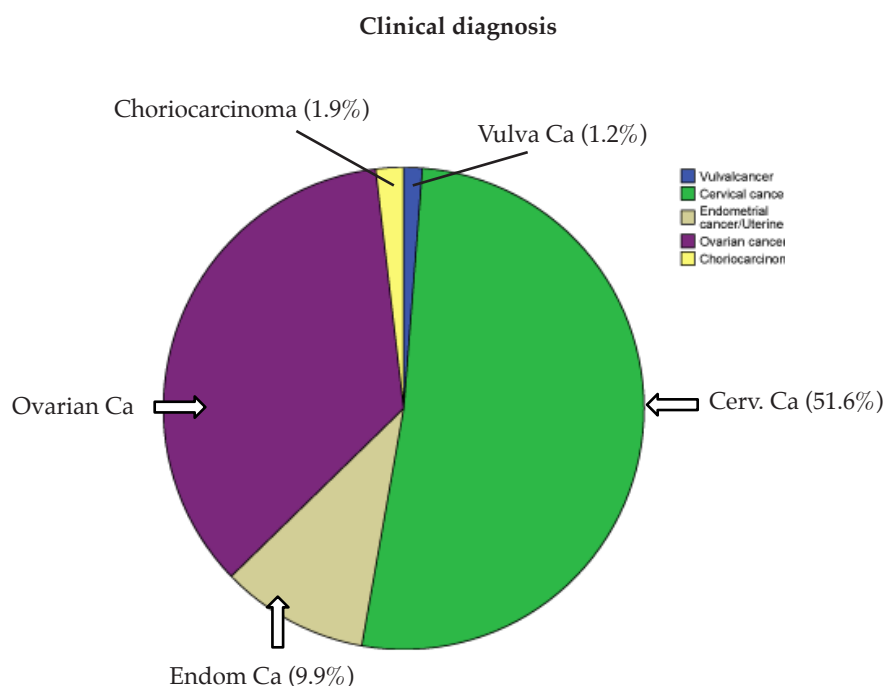


Figure 1 was a pie chart showing percentage distribution of cases of female genital tract cancers managed at the OOUTH Sagamu.

Table 3 demonstrates comparison of means of ages and parity between cervical cancer and other types of female genital tract cancers that was managed

at the teaching hospital. The observed differences in the means of both age ($F = 7.61$; $p < 0.0001$) and parity ($F = 3.27$; $p = 0.013$) amongst the women were statistically significant.

Table 4 demonstrates histopathological characteristics of female genital tract cancers that

were managed in OOUTH during the study period. Vulvar and cervical cancers were mainly squamous cell types, and cancers of the endometrium and ovary shared different differentiations and grades of adenocarcinoma varieties. The choriocarcinomas were mainly of the gestational type.

Table 5 demonstrates different stages of advancement of the diseases at presentation. Fifteen (9.3%) cases only presented at the early stages of the disease, and 146(90.7%) presented at late stages of the disease.

Table 6 shows the different treatment modalities for the tumours. Seventy-four (46%) of the cases, largely advanced stages of cervical cancer, could only have preliminary assessment that included examination under anaesthesia and taking of

biopsy for histological diagnosis before referral to more resourceful centers for further management. Seven (4.3%) patients had radical hysterectomies (Weirthem's hysterectomies) for early stage cervical cancer diseases. Irrespective of the stage at presentation majority of the ovarian cancer cases had surgery (total abdominal hysterectomy, bilateral salpingoophorectomy (TAH and BSO), infracolic omentectomy and removal of suspicious nodes and tumour deposits on the guts, abdomen and the diaphragm, and were then followed up by chemotherapy. Similarly early stage disease of endometrial cancer had TAH and BSO. Fourteen (8.4%) cases were terminally ill and could only have palliation treatment offered.

Table 3

Comparison of mean age and parity between cervical cancer and other female genital tract cancers managed at the Olabisi Onabanjo University Teaching Hospital, Sagamu between January 2004 and December 2013

Variable	Reference cancer	Cancer for comparison	Difference of Means	Test of significance	95% Confidence Interval	
					Lower Bound	Upper Bound
				(F = 7.61; p < 0.0001)		
Age	Cervical ca.	Vulvar ca.	-18.02	0.044	-18.024	8.818
		Endomet ca.	-13.39	0.000	-18.000	8.798
		Ovarian ca.	-2.44	0.225	-6.413	1.523
		Choriocarc	15.30	0.037	15.309	7.208
				(F = 3.27; p = 0.013)		
Parity	Cervical ca.	Vulvar ca.	-1.90	0.079	-4.030	0.223
		Endomet ca.	1.03	0.013	0.225	1.843
		Ovarian ca.	0.37	0.166	-0.159	0.913
		Choriocarc	1.76	0.048	0.015	3.511

Table 4

Histopathologic characteristics of Female Genital tract cancers treated at the Olabisi Onabanjo University Teaching Hospital, Sagamu, Nigeria between January 2004 and December 2013

Type of cancer	Frequency	Percentage (%)	
Vulvar cancer			
	Squamous cell carcinoma	2	1.2
Vaginal cancer	-	-	
Cervical cancer			
	1. Squamous cell carcinoma	78	48.4
	2. Adenocarcinoma	2	1.2
	3. Adenosquamous carcinoma	3	1.9
Endometrial cancer			

	1. Endometriod adenocarcinoma	11	6.8
	2. Serous adenocarcinoma	4	2.5
	3. Leiomyosarcoma	1	0.6
Ovarian cancer			
	1. Papillary serous adenocarcinoma	34	21.1
	2. Mucinous adenocarcinoma	9	5.6
	3. Endometriod adenocarcinoma	4	2.5
	4. Clear cell carcinoma	1	0.6
	5. Dysgerminoma	3	1.9
	6. Granulosa cell carcinoma	4	2.5
	7. Immature teratoma	2	1.2
Gestationa trophoblastic Neoplasia			
	1. Choriocarcinoma	3	1.9
Early stage diseases		161	100.0

Table 5

Female Genital tract cancers and their clinical and surgical stages at presentation and management at the Olabisi Onabanjo University Teaching Hospital, Sagamu, Nigeria.

						Late stage disease							
	1A	1B	1c	2A	LRC	2B	2C	3A	3B	3C	4A	4B	HRC
Vulvar cancer	-	-	-	-	-	1	-	1	-	-	-	-	-
Vaginal cancer	-	-	-	-	-	-	-	-	-	-	-	-	-
Cervical cancer	-	-	-	7	-	21	-	14	33	-	8	-	-
Endometrial cancer	-	-	4	1	-	9	-	-	2	-	-	-	-
Ovarian cancer	-	3	-	-	-	15	8	20	2	7	2	-	-
Fallopian tube cancer	-	-	-	-	-	-	-	-	-	-	-	-	-
Choriocarcinoma	-	-	-	-	-	-	-	-	-	-	-	-	3
	-	3	4	8	-	46	8	35	37	7	10	-	3
	15(9.3%)					146(90.7%)							

Table 6

Treatment modalities for Female Genital tract cancers that presented at the Olabisi Onabanjo University Teaching Hospital, Sagamu, Nigeria between January 2004 and December 2013

Cancer Type	Palliation Treatment	Radical Vulvectomy	Tumour Debulking	EUA, Biopsy & Referral	Extended or Radical Hysterect	TAH, BSO & Chemo-therapy	Chemo-therapy
Vulvar cancers	-	1	-	1	-	-	-
Vaginal cancer	-	-	-	-	-	-	-
Cervical cancer	12	-	-	64	7	-	-

Endo-metrial cancer	-	-	-	9	-	7	-
Ovarian cancer	2	-	9	-	-	46	-
Fallopian tube cancer	-	-	-	-	-	-	-
Chorio-carcinoma	-	-	-	-	-	-	3
	14	1	9	74	7	53	3

Table 7

Outcome of management in women who presented with female genital tract cancers at the Olabisi Onabanjo University Teaching Hospital, Sagamu, Nigeria between January 2004 and December 2013

Cancer Type	Alive & Referred	Alive & Discharged	Declined Medical Advice	Dead
Vulval cancer	-	-	2	-
Vaginal cancer	-	-	-	-
Cervical cancer	63	8	8	4
Endometrial cancer	5	-	7	4
Ovarian cancer	12	22	4	19
Fallopian tube cancer	-	-	-	-
Choriocarcinoma	-	-	2	1
	80	30	23	28

Table 7 demonstrates outcome of the management at the teaching hospital. About half of these cancers, 80(49.7%) had to be referred outside the hospital for lack of either manpower or infrastructures to offer optimal management. The two cases of the vulvar cancer declined further management following surgery in one and an initial evaluation in the other. Majority of the cervical cancer cases were referred for radiotherapy, 8 declined management after initial evaluation and 4 died during evaluation. Highest morbidity was found in ovarian cancer and many others that were referred or discharged were lost to follow-up. Two out the 3 cases of choriocarcinoma declined or could not complete treatment and one died while on evaluation and treatment.

DISCUSSION

During this study period gynaecologic cancers formed 8.7% of the total gynaecological ward admission, a figure considered high when compared with findings of 2.8% from Ghana by Nkyekyer, and 4.18% by Briggs in Port Harcourt, and 4.7% Emembolu in Zaria Nigeria (10-12). It however compares with findings of 10.7% by Yakassai and others in Kano, northern Nigeria in 2013 (7). The comparable incidence with later studies as against earlier studies would most likely be related to period of study. Yakassai and others' study was recent and that of Nkyekyer, Briggs

and Emembolu were findings over a decade when knowledge and awareness in cancer disease and management among the populace was not as high as it is currently. Hitherto cancerous diseases were considered afflictions from the devils, or witches, and only very few of the patients presented in the hospital for treatments while the majority sought traditional remedies. In other Low and middle income countries where awareness and knowledge among the citizenry is better and facilities are more resourceful incidence can be as high as 42.52% (13).

Cervical cancer remains the leading cause of cancer morbidity and death in women worldwide, second only to breast in women, and the commonest female genital tract cancers (1,2). Similarly, findings in this study demonstrated cervical as the most common female genital tract cancer, occurring in 51.6% of the cases. This finding is similar to findings of 59.2% by Galadanci and 48.6% by Yakassai in Kano northern Nigeria, and 58.6% by Nkyekyer in Ghana (6,7,10). It is, however, lower than a rate of 63% found in the same institution at a 3-year review of 65 histopathological specimens of cases of female genital cancers seven years ago (14). Values higher than these had been found in Nigeria and other sub-Saharan countries; 70.5% in Maiduguri, 73.1% in Ilorin and 73.6% in Port Harcourt, all in Nigeria, and 78% in Zimbabwe (15-18). In advanced countries of Europe and America the incidence of and mortality from

cervical cancer are not only low but lower than that of the endometrium (1,2,3,5,19,20). This is consequent upon effective cervical cancer screening programmes in these countries, thus preventing progression from premalignant lesions to invasive diseases.

Age and parity are important epidemiological risk factors in gynaecologic cancers. While cancers of the vulva and vagina are diseases of the elderly, from above the seventh decade of life, that of the cervix and ovary tend to occur at relatively younger age, occurring in the fifth and sixth decades (4,21). Like other studies before this there were findings of statistically significant difference between the mean ages of patients with different gynaecological cancers (6). In this study similar observation was established in this study; $F=7.61$, $p < 0.0001$. Similar finding was demonstrated in the parity; $F=3.21$, $p = 0.013$ (Table 3).

Vulvar cancer occurred at ages over 65 years in this study, while there was no case of vaginal and fallopian tube cancers, (Table 2). The mean age of occurrence for cervical and ovarian cancers are comparable (51.98 vs 54.42, MD -2.44, 95%CI -6.41 – 1.52, $p=0.225$). Similar findings were made in concerning parity for cervical and ovarian cancers (4.10 vs 3.72, MD 0.37, 95%CI -0.15 – 0.91, $p = 0.166$). However differences in age and parity between cervical or ovarian cancers and endometrial cancer are statistically significant, though stronger for age than parity. Finding for age between cervical and endometrial cancers are; 51.98 vs 65.38, MD -13.39, 95%CI -18.000 – 8.798, $p < 0.0001$. And for parity; 4.10 vs 3.06, MD 1.03, 95%CI 0.225 – 1.843, $p = 0.013$. The implications from these findings are that older and less parous women are more likely to develop endometrial cancer than as for cervical and ovarian cancers.

Following cancer of the cervix in order of occurrences are ovarian cancer 35.4%, endometrial cancer 9.9%, choriocarcinoma 1.9%, and vulva 1.2%. These findings are similar to other studies in similar environment (5-7,10-12,14-18).

Histo-pathological characteristics (table 4) are similar to findings in other studies in our environment and developing countries (. Squamous cell carcinoma are the predominant invasive cervical and vulvar cancers. Other histological types of invasive cervical cancer are adenocarcinoma and adenosquamous carcinoma (10-12,14-18). Different histologic types of adenocarcinoma were most expressed in endometrial and ovarian cancers. While endometrioid adenocarcinoma was mostly found in endometrial cancer, serous adenocarcinoma was the most common in ovarian cancer, occurring in 34(21.1%) of the cases. Other common histological types in ovarian cancer were mucinous adenocarcinoma (5.6%), granulosa cell (2.5%) carcinoma and endometrioid adenocarcinoma (2.5%). Clear cell carcinoma was the least commonly

encountered, found in one case throughout the ten-year study period. These findings are similar to findings by Yakassai in Kano, Agboola and others in Sagamu and Odukogbe in Ibadan (7, 14, 22).

Table 5 demonstrates stages of advancement of the diseases at presentation. Majority of the cases 146(90.7%) presented at the late stages of the disease and only few 15(9.3%) presented at stages that could be described as early stage disease for meaningful and beneficial interventions. This scenario is peculiar to studies from other parts of the country and other developing countries (6,7,10,13,15,18). About a third of endometrial cancers presented very early and more than half presented at the lower extreme of the late stage. This finding is peculiar with endometrial cancer and has to do with symptomatology of endometrial cancer that is usually dramatic and alarming (23). Cervical and ovarian cancers are known for presenting in late stages in developing countries due to lack of screening programmes and infrastructures, and low index of suspicions on the part of attending physicians (1,2). In this study over 90% of both cancers of the cervix and ovary presented at the advance stages of the diseases culminating in very little that could be done in treatment and outcome of management (Tables 6 and 7). Examination under anaesthesia for clinical staging and taking biopsy specimens for histological diagnosis was all that could be done for 64(77.1%) and 9(56.2%) of the cervical and endometrial cancer cases respectively. Twelve (14.5%) of cervical cancer cases were so terminally ill that only palliative supports could be offered as treatment options. Forty-six (86.8%) cases of ovarian cancers had total abdominal hysterectomy, bilateral salpingo-oophorectomy and infra-colic omentectomy and then planned for chemotherapy. Only few showed up for chemotherapy and majority of these abandoned or declined treatment. Finding of commonest fatality in ovarian cancer cases over other types of cancers in this study may not be representative of case fatality for comparison as majority of other cancers, especially cervical cancer, had to be referred outside the facility for further evaluation and treatment, and majority of the few that were managed were lost to follow up.

CONCLUSION

This study had demonstrated the burden of female genital tract cancers in our practice, and high incidence of cervical and ovarian cancers in our community. The study agrees with rarity of vulvar, vaginal and fallopian tube cancers as noted worldwide. Incidence of 51.6% of cervical cancer is high and this implies that a lot more efforts would be required at screening for premalignant diseases to prevent progression to invasive disease. Similarly the incidence of 35.4% of ovarian cancer is equally high. While there might be no guideline, currently, for screening in ovarian cancer

there is a need for physicians in our environment to develop high index of suspicions for women that present with suspicious symptomatology at consultations.

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