

Frequency and pattern of female genital tract malignancies in patients presenting with gynecological problems

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A B S T R A C T

Introduction: Significant morbidity and mortality is caused by cancers in women all over the world. Cancers of the female reproductive organs are called genital tract cancers. They include cervical cancer, ovarian cancer, endometrial cancer, vaginal carcinoma, cancer of the fallopian tubes and gestational trophoblastic tumor. After breast carcinomas, they account for the second most common carcinomas in females. This study will collect data from the local population and will enhance existing knowledge.

Objective: This study aimed to find the frequency of female genital tract malignancies in patients presenting with gynecological problems.

Methodology: This cross-sectional study was conducted from 1 June 2018 to 31 May 2022. After taking written informed consent, 256 patients presenting to Gynae A Unit, Ayub Teaching Hospital, Abbottabad, were included in the study. Patients with a history of menstrual irregularities, vaginal bleeding, abdominopelvic pain or mass were included, while those presenting with other gynecological problems were excluded. The confirmed diagnosis was made based on histopathology reports by the consultant pathologist of the laboratory in the hospital after the patient's surgery.

Results: Out of the 256 patients, 30 (11.71%) had female genital tract malignancies. The mean age was 48.79 years, and the standard deviation was 12.93 years. 17 patients (56.66%) had ovarian cancer, 5 (16.66%) had cervical cancer, 7 (23.33%) had endometrial cancer, and 1 (3.33%) had vaginal cancer. Ovarian cancer was the most common (56.66%), followed by endometrial cancer. Serous adenocarcinoma of the ovary was the most frequent type (26.66%). There was no significant difference in the proportion of malignancies between different age groups and between differences in parity.

Conclusion: The percentage of female genital tract malignancies in patients with gynecological problems is relatively high (11.71%), with serous adenocarcinoma of the ovary being the most common malignancy. Developing and implementing an effective health policy regarding early cancer detection and treatment is necessary.

Keywords: Female genital tract malignancies, Ovarian carcinoma, Endometrial carcinoma, Cervical carcinoma, Vaginal carcinoma.

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Introduction

Significant morbidity and mortality are caused by cancers in women all over the world.¹ Cancers of the female reproductive organs are called genital tract

cancers. They include cervical cancer, ovarian cancer, endometrial cancer, vaginal carcinoma, cancer of the fallopian tubes and gestational trophoblastic tumour.² After

breast carcinoma, these account for the second most common carcinomas in the female population.³ The burden of carcinomas differs in various places due to ethnic background, environmental and cultural factors, and socioeconomic status. In developed countries, the cancer burden is higher as compared to developing countries, but more people die from it in developing countries.⁴

Out of all female genital tract malignancies encountered, cervical carcinoma is most typical in underdeveloped countries⁵ in Pakistan, ovarian cancer is found to be the most frequently found.⁶ In developing countries like Pakistan, most of the patients with female genital tract malignancies are encountered with advanced stage of disease. The reason is the absence of attainability of effective screening tools, treatment and facilities to diagnose cancer.⁷

Early detection of cancers is closely associated with better survival and cure rates. In developed countries, the most common gynecological cancer is ovarian cancer, which has non-specific symptoms and late detection of the tumor. Most of the patients are diagnosed in stage 3 or 4. In the absence of screening, its diagnosis in the advanced stages leads to fatality.⁸ Options for prevention, detection, treatment, and palliative care for female genital tract malignancies are available. However, mortality from these cancers will exist unless means are adopted to control them in low-resource populations.⁹

Female genital tract malignancies vary with age. In the age group of 21 to 30 years, ovarian carcinoma is the most frequent, while in postmenopausal women, cervical carcinoma has the highest frequency.⁹ Endometrial malignancies are most frequently present in older age groups.¹⁰ The distribution of female genital tract cancers was studied by Jeph V et al. 67.2% of the cases were cervical cancers, 21.8% were ovarian cancers, 4.3% were endometrial, and no vaginal cancer was present among the patients studied.¹¹ This study aims to determine the frequency of female genital tract malignancies in the local population and will enhance existing knowledge. This may also help generate valuable data to build Pakistan's national cancer registry.

Methodology

This cross-sectional study was conducted from 1 June 2018 to 31 May 2022 after getting approval from the hospital's ethical and research committee. Patients meeting the inclusion criteria and seeking admission to Gynae A Unit, Ayub Teaching Hospital, Abbottabad, were included in the study after taking written informed consent. Patients of 18 to 70 years with a history of menstrual irregularities, vaginal bleeding, abdominopelvic pain or mass were included in the study, while those presenting with other gynecological problems were excluded. The confirmed diagnosis of female genital tract malignancy was made based on histopathology reports by a consultant pathologist of the laboratory in Ayub Medical College, Abbottabad, after surgery on female genital tract patients. The sample size was 256, calculated using the World Health Organization software "Sample size determination in health studies", assuming a confidence level of 95%, absolute precision of 4% and anticipated frequency of female genital tract malignancies to be 12.09%.¹¹ The sampling technique was non-probability consecutive sampling.

Data was analyzed by using SPSS version 21.0. Mean and standard deviation were calculated for numerical variables like age and parity. Frequencies and percentages were used for categorical variables like site of malignancy, type of malignancy and grade of malignancy. All results were presented in the form of diagrams and tables. The outcome variable was stratified by age and parity. The post-stratification chi-square test was used at a 5% level of significance.

Results

The sample size of our study was 256. Thirty patients (11.71%) were found to have female genital tract malignancies. Table 1 shows that 64 patients (25%) were aged 20 to 40. 62 (24.22%) had ages in the range of 41 to 50 years. 67 patients (26.17%) were in the age range of 51 to 60 years. 63 patients (24.61%) were aged between 61 and 70 years. The mean age was 48.79 years, and the standard deviation was 12.93 years. Table 2 shows that 17 out of 30 patients (56.66%) had ovarian cancer, 5 patients (16.66%) had cervical cancer, 7 patients (23.33%) had endometrial cancer and 1 patient (3.33%) had vaginal

cancer. Hence, ovarian cancer was the most common, followed by endometrial cancer.

Table 3 shows that 56 patients (21.88%) were nulliparous. 60 (23.44%) were primiparous, 66 (25.78%) were multiparous, and 74 (28.91%) were grand multiparous. Table 4 shows that 6 patients out of 30 were between 20 and 40, 7 were between 41 and 50, 10 were between 51 and 60, and 7 were 61 to 70 years old. Table 5 shows that 3 patients out of 30 were nulliparous, 5 were primiparous, 10 were multiparous, and 12 were grand multiparous. Table 6 shows that 19 out of 30 (63.33%) had low-grade malignancy, while 11 (36.66%) had high-grade malignancy. Table 7 shows the type of malignancy in patients. Serous adenocarcinoma of the ovary was the most frequently encountered type in our setup. 8 out of 30 patients (26.66%) had severe adenocarcinoma of the ovary. 5 out of 30 patients (16.66%) had mucinous adenocarcinoma of the ovary. 5 patients (16.66%) had squamous cell carcinoma of the cervix, 2 patients (6.66%) had mature cystic teratoma of the ovary, and 7 (23.33%) had endometrial adenocarcinoma. 1 patient (3.33%) had a mixed germ cell-sex cord-stromal tumor of the ovary, choriocarcinoma of the ovary and high-grade papillary serous carcinoma of the vagina each. No cases of vulval cancer or fallopian tube cancer were found.

Stratification of female genital tract malignancies concerning age and parity was performed. There was no statistically significant difference in the proportion of female genital tract malignancies between different age groups. Similarly, parity was also not associated with any statistically significant difference in the prevalence of female genital tract malignancies.

Table 1: Age Distribution (n=256)

Age (Years)	Frequency	Percentage
20- 40	64	25.00
41-50	62	24.22
51-60	67	26.17
61-70	63	24.61
Total	256	100

Table 2: Site distribution among 30 cancer patients

Site	Frequency	Percentage
Ovary	17	56.66
Cervix	5	16.66
Endometrium	7	23.33
Vagina	1	3.33
Total	30	100

Table 3: Parity of patients (n=256)

Parity	Frequency	Percentage
Nil	56	21.88
Primiparous	60	23.44
Multiparous (2-4)	66	25.78
Grand-multiparous (5 or more)	74	28.91
Total	256	100

Table 4: Stratification of malignancies concerning age

Years	Malignancy		
	Yes	No	Total
20-40	6	58	64
41-50	7	55	62
51-60	10	57	67
61-70	7	56	63
Total	30	226 ± 0.5	256 ± 0.5

Table 5: Stratification of malignancies parity

Years	Malignancy		
	Yes	No	Total
Nil	3	53	56
Primi	5	55	60
Multi	10	56	66
Grand-Multi	12	62	74
Total	30	226 ± 0.5	256 ± 0.5

Table 6: Grade of patients with malignancy

Grade	Frequency	Percentage
Low grade	19	63.33
High grade	11	36.66
Total	30	100

Table 7: Type of malignancy

Type	Frequency	Percentage
Mixed germ cell sex cord-stromal tumor ovary	1	3.33
Mature cystic teratoma of the ovary	2	6.66
High-grade papillary serous carcinoma of the vagina	1	3.33
Squamous cell carcinoma of the cervix	5	16.66
Adenocarcinoma endometrium	7	23.33
Mucinous adenocarcinoma of the ovary	5	16.66
Choriocarcinoma ovary	1	3.33
Serous adenocarcinoma of ovary	8	26.66
Total	30	100

Discussion

Female genital tract malignancies cause significant morbidity and mortality among women all over the world. Ovarian, endometrial, cervical and vaginal cancers are major female genital tract pathologies. Ovarian cancer is the seventh most frequently diagnosed genital cancer among women worldwide.¹² Approximately 239,000 cases and 152,000 mortalities worldwide are caused per year.¹³ The cervical cancer incidence is from 8 to 30 newly encountered cases per 100,000 women per year, varying with differences in the countries and regions¹⁴. These tumors contribute to approximately half of all malignancies of the female genital tract.¹⁵

In our study, 30 (11.71%) patients were found to have female genital tract malignancies. The mean age of these patients was 48.79 ± 12.93 years. In our study, 24/ 30

(80%) were in their 5th decade or older, while 22/30 (73.3%) were either multi or grand multigravida. In a study in Haryana, India, most patients were from 51 to 60 years of age or older, and most were multiparous.³ In Nigeria, the occurrence of all female genital tract cancers peaked between 46 and 60 years, which accounted for 32.3% of all cases.¹⁶ Most patients (48.7%) had five or more previous pregnancies. A significant number of cases were found in patients with high parity. The red-flag symptoms of ovarian cancer are abdominal and pelvic pain, bloating and a feeling of fullness.¹⁷ The most frequently found symptoms of endometrial cancer are vaginal discharge and abnormal uterine bleeding. Patients with advanced endometrial cancer may have symptoms the same as those with advanced ovarian pathology, such as abdominal or pelvic pain, distended abdomen, early satiation after food intake, or changes in bowel or urinary bladder functioning.¹⁸

Ovarian cancer was the most common in our study, followed by endometrial cancer. Among our patients, 17 (56.66%) had ovarian cancer, while 7 (23.33%) had endometrial, and 5 (16.66%) had cervical cancer. Similar to our study, the ovary was found to have the most number of patients in a study done in Jamshoro, Pakistan,¹ while in India, cervical cancer was found to be the most frequent.³ Jamal et al. in Pakistan found ovarian cancer in 42.4% of their cancer patients, making it the most common cause of all female genital tract carcinomas in their study, followed by cervical cancer.¹⁹ Cancer of the cervix was found in 66.3% of the cases, followed by ovarian cancer in 21.1% in a study conducted in Nigeria.⁷ Another study from Nigeria reported that the most common gynecological cancer was cervical cancer (52.7%), with ovarian cancer being the second most common (28.1%). They found endometrial cancers in 10.2% of cancer patients.¹⁶ A study conducted in Tehran showed that out of 450 cases, the highest percentage was ovarian cancer (55.5%). The uterine malignancies were second most common (24.9%), followed by cervical carcinomas (19.6%).²⁰ The incidence of cervical carcinomas is less in Pakistan than in developed nations. Despite this, the death rate is higher due to late diagnosis of cervical carcinoma,²¹ the reason for which is the absence of a structured program for cervical cancer screening in Pakistan.²²

Serous adenocarcinoma of the ovary was the most frequently encountered type in our setup (26.66%). Among ovarian tumors, serous cystadenocarcinoma was the most common cancer found in Delhi, India,²³ whereas Ahmed et al. found mucinous cystadenocarcinoma to be the most frequent in their study.⁴ Our results show that 19 out of 30 (63.33%) patients had low-grade malignancy while 11 (36.66%) had high-grade malignancy. On the contrary, a Nigerian study found that 60.5% of cases presented in advanced stages of the disease.¹⁶ There was no statistically significant difference in the proportion of female genital tract malignancies between different age groups. Similarly, parity was also not associated with any statistically significant difference in the prevalence of female genital tract malignancies.

Conclusion

Our study concludes that the percentage of female genital tract malignancies in patients with gynecological problems is relatively high (11.71%), with serous adenocarcinoma of the ovary being the most common malignancy. The majority of the cases presenting at an advanced stage suggest a need for the development and implementation of an effective health policy regarding early cancer detection and treatment.

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