

Clinical Characteristics of Gynecological Malignancies: A Retrospective Analysis

Haleema Yasmin,^{1*} Omema Akhtar,¹ Mairman Achakzai,¹ Memoona Rehman,¹
Samra Rizwan,¹ Mahrukh Hyder¹

ABSTRACT

Objective	To find out the clinical presentations, histopathological patterns, and treatment modalities for the gynecological malignancies.
Study design	Retrospective cross-sectional study.
Place & Duration of study	Department of Obstetrics and Gynecology Ward 08, Jinnah Postgraduate Medical Centre, Jinnah Sindh Medical University Karachi, from January 2022 to December 2024.
Methods	The records of all the patients diagnosed with gynecological malignancies (ovarian, endometrial, cervical, vulvar, vaginal, or gestational trophoblastic neoplasia) were retrieved. The file notes, operative details, histopathology reports, and other oncology related information were extracted and entered into a pre designed form. Variables collected included demographic data, risk factors, type of malignancy, staging according to the FIGO criteria and treatment modalities used. The data were entered into the SPSS version 30.0. Descriptive statistics were used to present the data.
Results	The records of 205 patients were reviewed that were found in conformity with the inclusion criteria. The mean age of the patients was 48.4±8.1 year. Most of the patients were multiparous (n=170 - 82.9%), overweight and obese (n=107 - 52.2%), and had comorbid conditions like diabetes mellitus (n=88 - 42.9%) and hypertension (n=41 - 20%), family history of cancer was noted in 103 (50.2%) 9+584 patients. Ovarian cancer was the most common malignancy (n=106 - 51.7%), followed by uterine (n= 59 - 28.8%) and cervical neoplasms (n=26 - 12.7%). Most of the ovarian tumors were of FIGO stage III (n=46 - 43.4%), while endometrial malignancies were commonly diagnosed at stage II (n=21 - 35.6%), and cervical cancers at stage III (n=69 - 37.1%). Treatment provided included primary surgery (n=44 - 21.5%) and neoadjuvant chemotherapy followed by surgery (n=46 - 22.4%) as well as other modalities.
Conclusion	Ovarian malignancies were the most frequent tumors encountered in this series. They were diagnosed at an advanced stage. The treatment was tailored for each patient according to the stage of the tumor at presentation.
Key words	Gynecologic oncology, Cervical cancer; Endometrial cancer, Ovarian cancer, Human papilloma virus.

¹Department of Obstetrics & Gynecology JPMC, JSMU Karachi.

Correspondence:

Dr. Haleema Yasmin ^{1*}
Department of Obstetrics & Gynecology
Jinnah Postgraduate Medical Centre, Jinnah Sindh Medical
University Karachi
Email: dr.haleemayasmin@yahoo.com

INTRODUCTION:

Gynecological malignancies are one of the major causes of morbidity and mortality among women worldwide.¹ In 2020, approximately 1.4 million new cases of gynecologic malignancies were reported globally, with cervical and ovarian cancers being the top causes of cancer related deaths in women.² Due to limited screening and vaccination programs in low-middle income countries, cervical cancer

accounts for over 300,000 deaths annually.³ These malignancies often go undetected until advanced stages.^{4,5}

In Pakistan national cancer registry is not available. The actual burden of gynecological malignancies is therefore difficult to estimate.⁶ However, hospital-based cancer registries and institutional data are often referred to find out the frequency of different gynecological malignancies.⁷ A rising trend is noted among middle-aged and elderly women in few studies.^{4,5} A retrospective study showed ovarian cancer to be the most frequent of all gynecologic malignancies. Similar findings are reported across different regions in Pakistan.⁸ However, detailed clinical characteristics like risk factors, staging, treatment modalities are often not reported. This highlights a need for more comprehensive analysis of gynecological malignancies.

It is crucial to understand the clinical pattern of the tumors in our context so as to develop targeted prevention and treatment strategies. The poor prognosis and survival outcomes reflect systemic delays. The study was conducted to provide information regarding the types, stage of the tumor and treatment provided for gynecological malignancies at our hospital so as to contribute to national data on the subject for understanding the pattern and future policy development.

METHODS:

Study design, place & duration: This was a retrospective cross-sectional study conducted in the Department of Obstetrics & Gynecology ward-08, Jinnah Postgraduate Medical Centre, Jinnah Sindh Medical University Karachi, from January 2022 to December 2024.

Ethical considerations: Institutional Review Board of Jinnah Postgraduate Medical Centre granted approval (No.F.2-81/2025-GENL/324/JPMC) for data analysis. Confidentiality of the data was maintained.

Inclusion and exclusion criteria: All patients diagnosed with gynecological malignancies with complete records available showing demographic, clinical and histopathological data, were included. The data of patients with incomplete or missing information were excluded.

Sample size estimation: In this retrospective data analysis all patients with gynecological malignancies managed during the study period were considered as the sample and included.

Study protocol: A structured data extraction form was used to gather information from manually maintained medical record in registers, from histopathology reports and operation theatre lists. Demographic and clinical variables included age, parity, BMI, comorbid conditions, use of oral contraceptive pills, family history of cancers. Malignancy related variables included type of gynecological malignancy, histopathological diagnosis, FIGO stage at diagnosis, treatment received and details of the treatment (type of surgery, chemotherapy/radiation received).

Statistical analysis: Data were entered and analyzed using SPSS version 30.0. Categorical variables were presented as frequencies and percentages. Continuous variables were presented as mean and standard deviation. Descriptive statistics were used to present the data.

RESULTS:

A total of 225 patients presented with gynecological malignancies during the study period. However, complete record was not available of 20 patients hence they were excluded from the final analysis. A total of 205 patients were the sample for this study. The age varied from 19 – 68 years. Mean age was 48±8.1 year. Thirty-five (17.1%) patients were nulliparous. Twenty-eight (13.7%) patients had low BMI, 81 (39.5%) were overweight and 26 (12.7%) obese. Thirty-five (17.1%) patients had no known comorbid. Eighteen (8.8%) patients had a history of oral contraceptive use. Details are given in table I.

The most frequently encountered gynecological malignancy was of ovarian origin (n=106 - 51.7%), followed by uterine malignancies (n=59 - 28.8%). The most common histopathological diagnosis was malignant mucinous cystadenocarcinoma (n=42 - 20.5%) for ovarian cancer, endometrioid adenocarcinoma of uterus (n=24 - 11.7%), squamous cell carcinoma of cervix (HPV associated; n=17 - 8.3%), and squamous cell carcinoma of vulva (n=8 - 3.9%).

Most frequent stage of the disease at the time of diagnosis for ovarian cancer was stage III (n=46 - 43.4%), stage III (n=69 - 37.1%) for cervical cancer, stage II (n=21 - 35.6%) for endometrial cancer, stage I (n=3 - 100%) for vaginal cancers and stage II (n=5 - 62.5%) for vulvar malignancies.

Forty-four (21.5%) patients were treated with upfront surgery, 19 (9.3%) had chemotherapy as first line treatment, 13 (6.3%) patients had initial

Table I: Epidemiological and Clinical Data of Gynecologic Malignances

Variable		Frequency (n)	Percentage (%)
BMI	Underweight	28	13.7%
	Normal BMI	70	34.1%
	Overweight	81	39.5%
	obese	26	12.7%
Comorbid	Hypertension	41	20%
	Diabetes mellites	88	42.9%
	Thyroid dysfunction	22	10.7%
	Cardiac disorders	19	9.3%
Smoking status	Smoker	02	1%
	Former smoker	26	12.7%
Family history of cancer	Yes	103	50.2%
Tubal ligation	Yes	18	8.8%
Menopausal status	Premenopausal	109	53.2%
	Postmenopausal	96	46.8%
Type of gynaecological malignancy	Ovarian	106	51.7%
	Endometrial	59	28.8%
	Cervical	26	12.7%
	Vulvar	08	3.9%
	Vaginal	03	1.5%
	GTN	03	1.5%

chemoradiation, 46 (22.4%) patients first received chemotherapy followed by surgery, 75 (36.6%) patients were treated surgically followed by chemotherapy, 5 (2.4%) cases had surgery followed by concurrent chemoradiation. Two (1%) patients received chemoradiation followed by surgery, one (0.5%) patient had surgery followed by immunotherapy.

Among surgical treatments, one patient underwent cystectomy, 97 (47.3%) had staging laparotomy, 46 (22.4%) had interval debulking and 5 (2.4%) had fertility sparing surgery for ovarian carcinoma. Radical hysterectomy was done in 13 (6.4%) cases out of which 11 received concurrent chemoradiation. Radical vulvectomy plus bilateral inguinal lymph node dissection was done in 8 (3.9%) patients. Wide local excision of vaginal growth was done in 3 (1.5%) women.

A total of 16 patients received chemotherapy as first line treatment. All of them presented in advanced stage of malignancy (stage IV). Three patients received EMA-CO therapy for treatment of

choriocarcinoma. Forty-six (22.4%) women first received neoadjuvant chemotherapy followed by interval debulking surgery. These patients presented in stage III of disease. A total of 13 patients received chemoradiation as first line treatment. These patients presented in stage IIa and above of cervical cancer. Two (1%) patients presented in stage III of carcinoma vulva. They received chemoradiation followed by radical vulvectomy plus bilateral inguinal lymph node dissection.

DISCUSSION:

This study presented the clinical characteristics of gynecological malignancies in a major public-sector tertiary care hospital in Karachi. The findings coincide with the national trends indicating ovarian cancer as the most prevalent gynecologic malignancy, followed by endometrial and cervical tumors. Ovarian cancers accounted for 51.7% of cases in our study which is consistent with the findings from other South Asian countries. Ovarian cancer remains a major contributor to cancer-related morbidity and mortality among women.⁹

Most ovarian cancers in our study presented at FIGO stage III, showcasing significant diagnostic delays. This finding is consistent with international data suggesting that more than 70% of epithelial ovarian cancers are diagnosed at advanced stages mainly due to non-specific symptoms and lack of effective early detection strategies.¹⁰ A high proportion of patients received neoadjuvant chemotherapy indicating late presentation with advanced-stage ovarian malignancies. Endometrial cancers were the second most common tumors in our study. Many patients presented in stage II due to postmenopausal bleeding as a major symptom prompting medical consultation. The HPV-associated cervical squamous cell carcinoma was the dominant subtype in this study. This reflects the need of screening and encouraging HPV vaccination which is now included in the national vaccination drive in Pakistan.

The American Cancer society report of 2023 highlighted modifiable risk factors like obesity, hormonal therapy, smoking and nulliparity in the etiology of these malignancies.¹²⁻¹⁴ It is noteworthy that family history of cancer was found in 50.2% of women. This highlights the potential role of genetic susceptibility. This calls for integration of genetic risk assessment, especially for BRCA mutations in ovarian cancer and Lynch syndrome in endometrial cancer.¹⁵ At present such services remain virtually non-existent in most of the public-sector facilities in Pakistan.

Limitations of the study: This is a single-center study with retrospective design without follow up and survival data.

CONCLUSION:

Ovarian cancer was the most prevalent gynecological malignancy. A large number of women presented at advanced stage of disease. Endometrial and cervical cancers followed in frequency. HPV related cervical carcinoma was also found in many women.

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