

# Pattern of Gynaecological Malignancies in a Tertiary Care Hospital

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## Abstract

**Background:** Gynaecological malignancies are the second most common cancer of females after cancer breast. Gynaecological malignancies contribute significantly to cancer burden and have a higher rate of mortality and morbidity. Carcinoma cervix is the commonest gynaecological malignancy in developing countries while in developed countries, ovarian cancer is the commonest. Comprehensive statistics on gynecologic malignancies reported from Bangladesh are deficient. This study was performed to ascertain the profile of gynecologic cancers reported at our center regarding demography, the frequency of involvement at various sites, clinical presentation, incidence, histologic subtypes and stage at presentation. **Methods:** This is a retrospective study where the records of the Departments of Gynecology and Pathology at Enam Medical College & Hospital, Dhaka, Bangladesh were retrospectively reviewed to identify all cases of Gynecologic malignancies and to determine the pattern of gynaecological malignancies identified between January 2015 and December, 2018. **Results:** Cervical cancer (53%) was the most common gynaecological malignancy, followed by ovarian cancer (29%), uterine cancer (8%), vulvar cancer (5%) and gestational trophoblastic neoplasm (GTN 5%). In the case of cervical and ovarian cancer the most common age group was 41 - 50 years and gestational trophoblastic neoplasm (GTN). The majority of patients presented at the ages of 31 - 40 years while uterine cancer presented in the elderly (>60 years). Among the patients studied 88% were multiparous. Of the cervical cancer cases, 96.22% was squamous cell carcinoma and commonest presenting complains were contact bleeding (33.96%) and excessive and irregular menstruation (26.41%). Among ovarian tumor cases 69% had epithelial while 31% had non-epithelial cancer and predominant complaint was abdominal distension (86.21%). Squamous cell carcinoma was 100% in vulva while endometrial adenocarcinoma (87.5%) was more frequent in uterus and commonest complain was postmenopausal bleeding (75%). For gestational trophoblastic neoplasm (GTN) 60% of patients had

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choriocarcinoma and menstrual irregularities were the commonest complaint (100%). Most cervical carcinoma and ovarian cancer patients presented at advanced stages. **Conclusion:** Most common gynaecological malignancy in our study is carcinoma cervix and most cancer patients presented with advanced stage. Proper screening and timely diagnosis can save many lives.

### Keywords

Gynaecological Malignancies, Histopathology, Stage, Bangladesh

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## 1. Introduction

Gynaecological malignancies are those involving the genital tract and include those of the ovary, cervix, uterus, vulva, vagina and gestational trophoblastic malignancies. These malignancies are leading cause of cancer-related deaths [1]. The pattern of gynaecological malignancies differs in various geographical areas owing to different environment, life style, genetic pattern and socioeconomic background [2]. Cervical cancer is one of the most common types of cancer in women after breast cancer [3]. Carcinoma cervix is the commonest gynaecological malignancy in developing countries while in developed countries, ovarian cancer is the commonest gynaecological malignancy [4]. Approximately 80% of cervical cancer occurs in developing countries [5]. In African and Indian studies, cervical cancer is the second most common type of cancer in women, following breast cancer [6] [7]. The incidence & mortality of cervical cancer had declined in North America during the last 50 years by two thirds to its present rank as the eight leading cause of cancer mortality, as an outcome of effective cervical screening program & treatment of premalignant lesions of cervix [8]. Ovarian cancer has the highest mortality rate in developing countries because as two-thirds of the cases present at the advanced stage [9]. Endometrial (uterine) cancer is the 6<sup>th</sup> most common cancer in women worldwide & leading genital malignancy in United States & other developed nations [7].

Age and parity are known to affect the incidence of gynecological cancers. Endometrial and ovarian cancers occur later in reproductive life than carcinoma of the cervix which is seen commonly in premenopausal or perimenopausal women. Endometrial carcinoma arises mainly in postmenopausal women, the peak incidence is in 55 to 65 age group and ovarian cancers are more common between the ages of 45 and 65 years. The peak incidence of cervical carcinoma is 45 years. Women of high parity have relatively low risk of developing endometrial and ovarian cancers, while multiparity is associated with increased risk of cervical carcinoma [8].

In Bangladesh, genital cancer is increasing day by day. Among those cervical cancer is the most common and it ranks as the second most frequent cancer among women. According to hospital-based statistics it constitutes 22% to 29%

of the female cancers in different areas of the country. Current estimates indicate that annual incidence of cervical cancer is 11,956; about 80% women come for treatment in advance stage and 6582 die from the disease [10] [11].

Cervical cancer occurrence is related to the human papillomavirus (HPV). HPV infection is transmitted through sexual activity and the possibility of transmission is increased with early stage of initiation of sexual activity, multiple sexual partners and high-risk sexual partner [12]. The highest prevalence of genital tract cancer in underdeveloped countries is due to lack of awareness, risky sexual behavior and absence of population-based screening procedure especially for cervical cancer [13].

Despite the high frequency of some female genital tumors in our country, there is paucity of literature on the subject. Therefore, this study was designed to provide information regarding the pattern of gynecological malignancies. These findings could have a significant implication to devise strategies for effective screening, early diagnosis and timely management to reduce the morbidity and mortality from these cancers.

## 2. Materials and Methods

This was a retrospective cross-sectional study of all the patients of gynaecological malignancies in department of Gynae & Obstetrics at Enam Medical College & Hospital between January, 2015 and December 2018. The clinical records of the patients from Department of Gynae & Obstetrics, Department of pathology & department of Oncology were reviewed with factors including age, parity, site of cancer, staging and histological type. Staging was done according to FIGO and histologic classification was done according to World Health Organization Histological Classification system. All cases included for the study had a definite histologic diagnosis made either on biopsy or resection specimens which were collected from Department of pathology, Enam Medical College & Hospital. Cancers diagnosed only on aspiration or cervical scrape smears, not followed by histologic confirmation were excluded. Tumors of borderline malignancy and metastasis to genital organs from other primary sites were also excluded from the study. The patients who had poorly maintained records & incomplete results were excluded from the study. Results were presented as number and percentage. Ethical clearance was taken from ethical review committee of Enam Medical College.

## 3. Results

A total of 100 new cases of gynecologic malignancies were reported and treated at our center between January 2015 and December 2018.

**Table 1** shows that the most common female genital tract malignancy was carcinoma cervix (53%).

**Table 2** shows that both cervical and ovarian cancer were more common within the age range of 41 - 50 years (30.19% and 31.03% respectively). Uterine

**Table 1.** Relative frequency of gynaecological malignancies.

Site of malignancy	No. of patients	Percentage
Ca cervix	53	53%
Ovarian cancer	29	29%
Uterine carcinoma	8	8%
Vulval carcinoma	5	5%
GTN	5	5%

GTN: gestational trophoblastic neoplasm.

**Table 2.** Distribution of gynaecological malignancies according to age of patient.

Age (years)	Cervix	Ovary	Uterine	Vulva	GTN
10 - 20		2 (6.9%)			
21 - 30	3 (5.66%)	1 (3.45%)	1 (12.5%)		
31 - 40	12 (22.64%)	8 (27.59%)		2 (40%)	3 (60%)
41 - 50	16 (30.19%)	9 (31.03%)	2 (25%)	2 (40%)	2 (40%)
51 - 60	15 (28.30%)	5 (17.23%)	1 (12.5%)	1 (20%)	
61 - 70	6 (11.32%)	3 (10.34%)	3 (37.5%)		
70 and above	1 (1.88%)	1 (3.45%)	1 (12.5%)		

cancer was most common in older age group 61 - 70 years (37.5%). Below the age of 20 years no other malignancies found except ovarian cancer (6.9%).

**Table 3** shows that majority (88%) patients are multiparous and only 3% patient are nulliparous, and all of the nulliparous cases are ovarian cancer.

**Table 4** shows presenting complains of different gynaecological malignancies. In case of carcinoma cervix majority patients complain of contact bleeding & menstrual irregularities. In ovarian cancer most patients presented with abdominal distension. Uterine cancer patients presented mostly with postmenopausal bleeding. Most vulval cancer patient presented with vulval growth. All GTN patients presented with menstrual irregularities.

**Table 5** shows that among carcinoma cervix the main histological type was squamous cell carcinoma observed in 51 (96.22%) patients. Of the ovarian malignancies, epithelial tumors were observed predominantly in 20 (69%) patients, followed by germ cell tumors in 6 (20.6%) patients. Serous adenocarcinoma was the most common histological type of epithelial ovarian cancer with 10 patients (50%), followed by mucinous adenocarcinoma in 4 patients (20%); Dysgerminoma was the most common histological type of germ cell tumor with 3 patients (50%), followed by ovarian choriocarcinoma 2 patients (33.33%). Granulosa cell tumor was the most common histological type of sex cord tumor with 2 (100%) patients. Adenocarcinoma was the most common histological type of uterine cancer with 7 patients (87.5%). Of the vulval malignancies, squamous cell carcinoma was in all 5 (100%) patients. In gestational trophoblastic neoplasm, choriocarcinoma was observed in 3 (60%) patients, invasive mole in 2 (40%) patients.

**Table 3.** Distribution of patients according to parity.

Parity	Cervix	Ovary	Endometrium	Vulva	GTN
Nulliparous		3 (10.34%)			
Para1	2 (3.77%)	5 (17.24%)			2 (40%)
Para2 & above	51 (96.2%)	21 (72.41%)	8 (100%)	5 (100%)	3 (60%)

**Table 4.** Distribution of gynaecologic malignancies according to presenting complaints.

	cervix	Ovary	Uterine corpus	Vulva	GTN
Postmenopausal bleeding	10 (18.86%)		6 (75%)		
Abdominal distension		25 (86.21%)			
Pain abdomen		4 (13.79%)			
Excessive vaginal discharge	8 (15.09%)		1 (12.5%)		
Menstrual irregularities	14 (26.41%)		1 (12.5%)		5 (100%)
Vulval itching				1 (20%)	
Vulval growth				4 (80%)	
Contact bleeding	18 (33.96%)				
Incontinence of urine	3 (5.66%)				

**Table 5.** Distribution of gynaecological malignancies according to histology.

Site	Type of tumour	Histology	Number of patient	Percentage
Cervix		Squamous cell carcinoma	51	96.22%
		Adenocarcinoma	2	3.77%
Ovary	Epithelial (69%)	Serous	10	50%
		Mucinous	4	20%
		Brenner	2	10%
		Other	4	20%
	Germ cell tumour (20.6%)	Dysgerminoma	3	50%
		Ovarian choriocarcinoma	2	33.33%
	Sexcord stromal tumour (6.9%)	Granulosa cell tumour	2	100%
Uterus (corpus)		Adenocarcinoma	7	87.5%
		Leiomyosarcoma	1	12.5%
Vulva		Squamous cell carcinoma	5	100%
GTN		Choriocarcinoma	3	60%
		Invasive mole	2	40%

**Table 6** shows that majority patients of carcinoma cervix and ovarian cancer are presented at advanced stage. In carcinoma cervix patients only 16 patients

**Table 6.** Distribution of gynaecological malignancies according to FIGO staging.

Stage	Cervix	Ovary	Uterine body	Vulva	GTN
I	6 (11.32%)	3 (10.34%)	4 (50%)	1 (20%)	3 (60%)
II	23 (43.4%)	5 (17.24%)	4 (50%)	4(80%)	2(40%)
	10 (18.87%)				
	13 (24.52%)				
III	21 (39.62%)	18 (62.07%)			
IV	3 (5.66%)	3 (10.34%)			

were in early operable stage (I & IIA). Rest of the patients (37 patients –69.8%) were in advanced stage & send for radiotherapy. Among ovarian cancer patients 21 patients (72.41%) presented at stage III & IV disease. All vulval, uterine & choriocarcinoma patients presented at stage I & II disease. All ovarian, uterine, vulval carcinoma & GTN patients undergone surgical treatment & then referred to Oncology Department.

#### 4. Discussion

Gynaecological malignancies are an important cause of morbidity and mortality in females these days. In present study cancer cervix is the commonest gynaecological malignancy (53%) followed by ovarian (29%), uterine (8%), vulval (5%), GTN (5%). Almost similar result was found in study of Sarkar *et al.* who reported frequency of cervical malignancy (61.9%), ovarian malignancy (23.9%), Chaudhary S who reported cancer cervix being commonest gynaecological malignancy (65.26%) followed by ovarian (22.11%), endometrial (7.89%), vaginal (2.11%), while study of Y Jhansivani reported cancer cervix (86.1%) and cancer ovary (4.68%) in their studies but study of Nasreen reported ovarian cancer more than cervical cancer in his study (48%, 24% respectively). Another study conducted in Tehran also reported that the highest percentage was ovarian cancer (55.5%), followed by malignancies of the uterus (24.9%) and cervix (19.6%) [4] [14] [15] [16] [17].

In present study, age of the patients ranged from 12 to 80 years. Majority of cancers (78%) presented between 4<sup>th</sup> & 6<sup>th</sup> decade of life with a peak incidence in the 5<sup>th</sup> decade (31%). Both cervical cancer and ovarian cancer is predominant in the younger age groups (41 - 50 years) than other studies. In a study from India median age for carcinoma cervix was 50 years which was similar to ones reported from the Surveillance, Epidemiology, and End Results (SEER) Program (of the United States) and European Union [18] [19] [20]. Results from a study in Nigeria showed that the majority of ovarian cancer occurs in the 50 - 59 year age group [21]. Uterine cancer is the third most common site of gynecological tract malignancies (8%) with the majority of patients presenting in the older age groups (>60 years), which is comparable to study in Pakistan [22]. In western countries uterine malignancies are significantly higher in proportion as to those reported at our center and median age is about a decade higher than our studies

[9] [10]. Above 75 years of age cervical, uterine and ovarian malignancies were significantly lesser in our study presumably due to a lower life expectancy in our country. No appreciable differences were seen in the distribution of vaginal and vulval cancers [18] [19] [20]. This suggests disparity in the effectiveness of screening programs.

In our study percentage of multiparous females were more (88%) similar to Chaudhary S and these females are high risk for cervical malignancy due to early marriage, low socio-economic condition and lack of awareness for screening [15].

It was observed that commonest presenting complain for carcinoma cervix was contact bleeding (33.96%) and excessive & irregular menstrual bleeding (26.41%), postmenopausal bleeding is the commonest presenting complaint for uterine cancer (75%), abdominal distension for ovarian cancer (85.21%) and menstrual irregularities for choriocarcinoma (100%). In study of Chaudhary S, postmenopausal bleeding was the commonest symptom (39.47%), followed by excessive white discharge, abdominal distension, contact bleeding (23.15%, 14.74%, 8.42% respectively) while study of Sarkar *et al.* reported excessive, offensive with or without blood-stained vaginal discharge as the most frequent symptom (69.0%) followed by irregular, heavy or prolonged vaginal bleeding (36.3%) and post-menopausal bleeding (31.9%) [14] [15].

In present study most common histological type is squamous cell carcinoma which was seen in 96.22% cases of carcinoma cervix and all vulval cancers, while 97.61% ovarian, 87.5% endometrial and 3.77% cervical carcinoma were adenocarcinomas, almost similar results were observed by study of Sarkar *et al.* and Chaudhary S [14] [15]. Of the ovarian malignancies, epithelial tumors were predominant (69%), followed by germ cell tumors at 20.6% and sex cord-stromal tumor (6.9%). Serous adenocarcinoma was the most common histological type of epithelial tumor while dysgerminoma was a common malignant type of germ cell tumor and granulosa cell tumor a common malignant type of sex cord tumor. In a study by Hina histological types were almost similar except mucinous adenocarcinoma was the commonest epithelial cancer. Similar findings were observed in other studies regarding histological types [23] [24] [25].

It was found that most of cervical carcinoma cases reported in stage II, stage III and stage IV (88.68%) and only 11.32% patients were in stage I similar to studies of Jhansivani Y, Sarkar *et al.*, Chaudhary S and Agarwal. In all these studies, gynaecological malignancies were reported in advance stages [14] [15] [16] [18].

## 5. Conclusion

Most common gynaecological malignancy in our study is carcinoma cervix which is largely a preventable disease. There is a need to increase public awareness on the risk factors and the Government should try to enroll all eligible women in cervical cancer screening programs and ensure HPV vaccination

available & affordable to all women. Most of the gynaecological cancers are reported in the advanced stage and cancers other than that carcinoma cervix are not preventable. More efforts are needed to increase the awareness in the general population regarding common abnormal presenting symptoms. A more practical way for reducing late diagnosis of cancer involves development of well-equipped specialized centers providing affordable treatment to reduce the burden of advanced stage cancer.

### Conflicts of Interest

There was no conflict of interest.

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