Original Article

Clinicopathological Patterns and Stages of Gynaecological Malignancies at Combined Military Hospital, Dhaka

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ABSTRACT:

Introduction: *Now-a-days a surge in gynaecological malignancies has been observed in both developed as well as developing countries, the exact cause is though unknown. Literature shows that every region has disparities in the frequency of commonly occurring cancers.*

Objective: *The objective of this study was to assess frequency, histopathological pattern, stage of various gynaecological malignancies presenting to tertiary care hospital of Bangladesh.*

Methods: A retrospective hospital-based study was conducted in CMH, Dhaka of Bangladesh from July 2021 to June 2024 for total 3 years.

Results: *There were 208 patients diagnosed with gynaecological malignancy during the study period. According to the study result, Cervical carcinoma (44.71%) was the most frequently occurring female genital malignancy followed by Ovarian cancer (34.61%) and Endometrial carcinoma (12.5%). Gestational trophoblastic diseases were found in 4.08% cases and Vulvo-vaginal cancers were found in total 3.42% cases. 86.02% cases of cervical cancer were SCC and 83.33% of ovarian cancer were epithelial origin. Maximum number of patients belonged to 51-60 years group (34.13%). Cervical cancer had peak incidence at 51-60 years age range compared to patients with ovarian cancer and uterine cancers peaked at age 61-70 years, where GTN peaked at age 31-40 years. Highest proportion of cervical cancer was stage 2 and endometrial cancer was stage 1, while the highest proportion of ovarian cancer was stage 3.*

Conclusion: *Cervical cancer was commonest gynecological malignancy followed by ovarian and then uterine cancer. Late presentation with advanced stage was seen in majority of all cancers.*

Key Words:
Gynecological malignancies, Gynecological cancers (GCs), Gestational trophoblastic neoplasia disease

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Introduction

Gynaecological cancers (GCs) significantly impact women's quality of life and impose a substantial burden on healthcare systems worldwide [1,2]. These malignancies include cancers of the vulva, vagina, cervix, uterus, ovaries, and fallopian tubes, classified according to their

anatomical origin. Among them, endometrial, ovarian, and cervical cancers are the most prevalent, collectively accounting for more than one-third of all newly diagnosed cancers among women globally [3,4]. The occurrence of GCs is influenced by a complex interplay of genetic susceptibility, environmental factors, and behavioural practices [5]. Preventive strategies such as adopting a healthy diet, abstaining from tobacco use, practicing safe sex, and receiving the HPV vaccine play a crucial role in lowering disease risk. In addition, regular medical screening enhances prevention by facilitating early detection and timely intervention [5]. Nevertheless, inadequate public awareness, limited screening coverage, and delayed health-seeking behaviour contribute to the late-stage presentation and escalating burden of these malignancies [5]. While comprehensive national data on the incidence and mortality of individual gynaecological cancers in Bangladesh remain limited, several localized studies have attempted to assess their prevalence in different regions. Therefore, institutional data from our centre can provide valuable insights into the current epidemiological landscape of GCs in the country, helping inform policy development, research priorities, and future cancer control strategies. In this article, we presented our institutional data of each common GC and summarised their overall prevalence, histological pattern, age predilection of individual GCs and stage at presentation to enable a comprehensive understanding of GCs in perspective of our country.

Materials and Methods

A retrospective hospital-based study was conducted in CMH, Dhaka of Bangladesh from July 2021 to June 2024 for total 3 years. The clinical records of the patients from inpatient and outpatient department of gynae oncology were reviewed to identify all cases of gynaecological malignancies. Ethical approval was granted by the ethical board of the Hospital. Descriptive data analysis was performed for frequencies and cross tabulation tables.

Results

The Cancer Centre of the Combined Military Hospital (CMH), Dhaka, is one of the country's leading tertiary institutions providing comprehensive oncological care and, therefore, receives a substantial number of patients with various malignancies. In this study, institutional data were reviewed to determine the frequency, distribution patterns, stages at presentation, age variations, and histopathological subtypes of different gynaecological cancers, allowing comparison with findings from national and international studies.

During the study period, a total of 208 patients were diagnosed with gynaecological malignancies. Among these, cervical carcinoma was the most prevalent, accounting for 44.71% of all cases. Ovarian cancer ranked second, representing 34.61%, while endometrial carcinoma comprised 12.5% of cases. Gestational trophoblastic diseases were identified in 4.08%, and vulvovaginal cancers collectively accounted for 3.42% of the total cases (Table I).

Table-I. Frequencies of gynaecological malignancies

Site of Malignancies	No of Patients	Percentage
Cervical cancer	93	44.71
Ovarian Cancer	72	34.61
Endometrial cancer	26	12.5
GTN	10	4.08
Vaginal cancer	4	1.98
Vulval cancer	3	1.44

86.02% cases of cervical cancer were SCC with 11.83% adenocarcinoma and 1.07% adenosquamous carcinoma. All vulvovaginal cancers were also squamous cell carcinoma. Among the ovarian cancer, 83.33% was epithelial origin followed by Germ cell tumour 5.55% and Sex cord stromal cell tumour 4.17%. The most common histological type of epithelial ovarian carcinoma was serous adenocarcinoma (48.33%). This was followed by mucinous adenocarcinoma (35%) and endometrioid variety (8.33%). Other rare varieties of ovarian cancer were also seen, e.g. primary peritoneal carcinomatosis, GIST, brenner tumour, malignant urothelial tumour etc. There were 1 case with dual primaries in cervical and ovarian sites, 1 case with synchronous uterine and ovarian malignancy and 1 case with primary peritoneal carcinomatosis. Uterine cancers were mostly consisted of endometrioid histology (about 65.38%) followed by serous variety (19.23%) and MMT (15.38%). (Table-II)

Table-II. Histological Varieties of gynaecological malignancies

Site	Type of tumour	Histology	No of Patients	%
Cervical cancer			93	
		Squamous cell carcinoma (SCC)	80	86.02
		Adenocarcinoma	11	11.83
		Adenosquamous	1	1.07
		Dual cancer with (Endocervical Adenocarcinoma and Mucinous Cystadenocarcinoma of ovary)	1	
Ovarian Cancer			72	
	Epithelial		60	83.33
		Serous	29	48.33
		Mucinous	21	35
		Endometroid	5	8.33
		Brenner	1	
		PPC(Primary Peritoneal arcinomatosis)	1	
		Malignant urothelial tumour	1	
		Dual cancer with (Ovarian Mucinous Cystadenocarcinoma with Endocervical Adenocarcinoma)	1	
		Synchronous endometrial & ovarian adenocarcinoma	1	
	Germ Cell Tumour	Immature teratoma	4	5.55
	Sex cord stromal tumour		3	4.17
		Adult granulosa cell tumour	2	
		Ovarian fibrosarcoma	1	
primary peritoneal carcinomatosis			1	
GIST			1	
Endometrial Cancer			26	
		adeno Carcinoma	17	65.38
		Serous	5	19.23
		MMT	4	15.38
GTN			10	
		PGTN	9	90
		Choriocarcinoma	1	10
Vagina		**SCC**	4	
Vulva		**SCC**	3	

Age of the patients showed that only 5.77% of the patients were within 30 years age group. In our study, maximum number of patients belonged to 51-60 years group (34.13%). Our findings also revealed that patients with cervical cancer had peak incidence at 51-60 years age range compared to patients with ovarian cancer and uterine cancers peak at age 61-70 years, where GTN peaks at age 31-40 years. (Table-III)

Table-III. Distribution of these gynaecological cancers by age

Age (years)	Cervical	Ovarian	Endometrial	Gtn	Vaginal	Vulvar	Frequency	%
≤30	1	7		4			12	5.77
31-40	7	8	2	5		1	23	11.05
41-50	27	12	2	1	1	1	44	21.15
51-60	38	21	9		2	1	71	34.13
61-70	16	22	11		1		50	24.03
70 and above	4	2	2				8	3.84

Data about the stage of cancer at the time of the first appointment at the cancer registry showed that the highest number of patients (37.25%) presented with cancer stage 2. Analysis by stages of different cancers showed that the highest proportion of cervical cancer was stage 2 and uterine (endometrial) cancers was stage 1, while the highest proportion of ovarian cancer was stage 3. (Table IV)

Table-4. Stage of gynaecological cancers at presentation (according to FIGO staging)

Stage	Cervical	Ovarian	Endometrial	Gtn	Vulva	No.	(%)
I	18(19.35%)	8(11.11)	20(76.92)	10	2	58	28.43
II	57 (61.29)	12(16.66)	6(23.07)		1	76	37.25
III	12 (12.90)	42(58.33)				54	26.47
IV	6(6.45)	10(13.89)				16	7.84

Discussion

This study was undertaken to explore the frequency, distribution, and clinicopathological characteristics of gynaecological cancers among patients attending a tertiary cancer care centre in Bangladesh.

Data from GLOBOCAN 2022 confirms that cervical cancer is the leading gynecological malignancy globally, with uterine and ovarian cancers following in frequency [6]. Our study reflected this global picture, with cervical cancer representing the largest group of cases at 44.71% followed by Ovarian cancer was the second most frequent in our cohort (34.61%) and uterine cancer accounted for 12.5% of cases, placing it third. This distribution is consistent with the national pattern reported for Bangladesh by the Global Cancer Observatory [7]. But, In the majority of western countries, the most common gynaenocological malignancy is Uterine cancer followed by ovarian cancer being the second-most common cancer and Cervical cancer is the third most common type [7].

The remaining cases comprised gestational trophoblastic neoplasia (4.08%), vaginal (1.98%), and vulvar cancers (1.44%). These findings are largely in agreement with prior studies by Haque F et al. [8] and Afroz S F et al. [9], though our cohort showed a moderately higher incidence of ovarian cancer and a slightly lower one for cervical cancer. Studies from Nigeria and India similarly identified cervical cancer as the most prevalent gynaecological malignancy, followed by ovarian and endometrial cancers [10,11]. Comparable results have also been documented in Ghana, Ethiopia, and other low- and middle-income

countries [10,11,12,13]. In contrast, findings from Pakistan, Iran, Turkey, and several Western countries demonstrated a different pattern. Research from developed regions consistently shows uterine cancer as the predominant gynaecological malignancy, ranking fourth overall among female cancers after breast, lung, and colorectal malignancies [14,15].

In Pakistan and Iran, several studies have reported ovarian cancer as the leading gynaecological malignancy, followed by cervical and uterine cancers [16,17,18,19]. Similarly, a nationwide Turkish study found that uterine corpus cancer was most common, followed by ovarian and cervical cancers, with incidence rates for ovarian and uterine cancers comparable to those seen in Europe, whereas cervical cancer incidence was markedly lower [20]. An analysis of patient ages showed that the vast majority of gynecological cancers (90.39%) were diagnosed in women between 31 and 70 years old. Only a small fraction of cases occurred in women under 30 (5.7%) or over 70 (3.84%), a pattern consistent with the findings of Haque F et al. [8]. When we looked at specific cancers, the most common types are cervical, ovarian, and uterine, peaked in prevalence during a patient's 6th and 7th decades of life in our cohort. This contrasts with a study by Afroz S et al., which reported a higher prevalence among younger women (41-50 years) [9]. The median age for cervical cancer was around 50 years, according to the data from the SEER Program and the European Union [21,22]. While the NICRH registry in Bangladesh also notes a peak at 50 years, but our data showed the highest frequency in the slightly older 51-60 age group (40.85%) [23].

We also observed distinct age patterns for other cancers. Ovarian cancer was most common in women aged 61-70 in our study, whereas other regional studies reported younger peak ages of 45-54 in Bangladesh and a mean age of 51 in Pakistan [8,9,16,17]. A similar trend was seen in Nigeria, with a peak within the 50-59 age range [49]. For uterine cancer, most diagnoses were in women over 60, matching local and regional reports [8,9,16], though this is a decade younger than the median age of 70-75 typical in Western populations [25,26]. The lower frequency in women over 75 in our cohort is likely a reflection of Bangladesh's shorter national life expectancy. Traditionally, vulvar cancer has been regarded as a disease of postmenopausal women. In our study, both vaginal and vulvar cancers primarily occurred in the 5th and 6th decades, older than what Afroz S et al. reported but younger than the data from Haque F et al. [8,9]. This trend toward a younger patient profile is supported by Wasim T et al.,[16] who observed a mean age of 55, significantly lower than the average of 70 in Western studies [26,14,15,25].

Finally, an examination of cancer stages at diagnosis revealed that 28.36% of all gynecological cancers were detected in stage I and 32.21% in stage II, closely matching results from Khaskheli M et al. [17]. Unfortunately, late-stage diagnosis was common. For cervical cancer, only 19.35% were caught early, with nearly 80% already advanced at diagnosis, a troubling rate similar to other reports from Bangladesh and India [8,9,11,12,13,16]. Ovarian cancer also presented late, with 58.33% at stage III and 13.89% at stage IV, consistent with international findings [8,9,16].

Histopathological evaluation revealed that 86.02% of cervical cancers were squamous cell carcinomas, 11.83% were adenocarcinomas, and 1.07% were adenosquamous carcinomas, comparable to the findings of Haque F et al. [8]. Ovarian tumours were predominantly epithelial (83.33%), followed by germ cell (5.55%) and sex cord stromal tumours (4.17%), in line with other regional studies [8,9,28,29]. Among epithelial types, serous adenocarcinoma was most frequent (48.33%), followed by mucinous (35%) and endometrioid (8.33%).

In uterine cancers, endometrioid carcinoma constituted 65.38%, followed by serous (19.23%) and malignant mixed Müllerian tumours (15.38%), consistent with regional patterns but slightly differing from Afridi HK et al., who found a higher proportion of carcinosarcomas [29]. Endometrial carcinoma was predominantly diagnosed at stage I (76.9%), comparable to other reports [16,17]. A shift toward younger age at diagnosis was noted for some rarer cancers. Although vulvar cancer has traditionally affected postmenopausal women, its average age of onset is declining globally, largely attributed to rising HPV infections [27]. Vulvar and vaginal cancers were rare, comprising 2.03% and 1.52% respectively, all squamous cell types—closely matching previous findings [8]. Gestational trophoblastic disease (GTD) accounted for 5%, aligning with Bangladeshi and Pakistani studies [8,9,29]. Primary peritoneal carcinoma and dual primaries were rare, observed in 1 case each (1.38%), similar to frequencies reported elsewhere [29].

Conclusion

Cervical cancer which is the commonest gynecological malignancy is a preventable disease through HPV vaccination and screenings procedure, still then we had 80%

patient with advance disease in our OPD. On the other hand, two third of our patients with ovarian cancer presented in stage 3 or 4. So, Public awareness should be created for early presentation to reduce morbidity and mortality.

Limitations: This study was conducted in a single tertiary care centre, which may not fully represent the broader population of Bangladesh. The findings, therefore, should be interpreted with caution when generalizing to the national context.

Recommendation: Establish a national cancer registry. Conduct multi-centre, large-scale studies to identify risk factors specific to the Bangladeshi population, including lifestyle, dietary, and genetic influences. Develop public awareness campaigns focused on early recognition and screening for gynaecological cancers. Implement age-appropriate national screening programs for all major gynaecological cancers.

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