CLINICO-EPIDEMIOLOGICAL FEATURES OF PATIENTS WITH ENDOMETRIAL CARCINOMA IN CLINICAL ONCOLOGY DEPARTMENT IN AIN SHAMS UNIVERSITY HOSPITALS IN EGYPT

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ABSTRACT:

Background: *Endometrial carcinoma (EC) is the most common gynaecological malignancy in high-income countries. Several studies have demonstrated the prognostic importance of different parameters including the histological subtypes, grade, stage, depth of myometrial invasion, lymphovascular space involvement, positive peritoneal cytology and cervical involvement.*

Aim of the Work: *To analyse retrospectively epidemiological, clinicopathological features, treatment strategies and survival outcomes of patients diagnosed with EC.*

Patients and Methods: *This is a retrospective study that included 65 patients diagnosed with EC attending the gastrointestinal and gynecological malignancies clinic at the Clinical Oncology Department, Ain Shams University, in the period from January 2017 to December 2020.*

Results: *The mean age at diagnosis was 61 years, most of the patients 90.8% were postmenopausal and the mean BMI was 38.7 kg/m2. The 5-year overall survival (OS) was 83%, with a mean of 57.8 months, and the 5-year disease free survival was 79% with a mean of 49 months. Among the prognostic factors that were analyzed, only FIGO stage and depth of myometrial invasion showed statistically significant impact on survival. The 5-year OS was 100% for stage IA, 81% for stage IB, 88.9% for stage II, 83% for stage IIIA, 66.7% for stage IIIB and none of those with stage IIIC survived till the end of our study ($p<0.001$). The 5-year OS for those with myometrial invasion <50% was 100% while those with myometrial invasion ≥50% was 76% ($p=0.025$).*

Conclusion: *We conclude that the FIGO stage and depth of myometrial invasion are the most significant prognostic factors and strong predictors of survival.*

Keywords: *endometrial carcinoma; FIGO stage; myometrial invasion; survival*

INTRODUCTION:

Endometrial carcinoma (EC) is the sixth most common cancer in females and the gynaecological malignancy with the greatest incidence in high-income countries[(1)]. In the United States, it is the fourth most common cancer among females, and it ranks sixth in cancer-related deaths[(2)]. According to GLOBOCAN 2020 online database, uterine cancer ranked in Egypt as the fifteenth most common malignancy and accounted for 350 cancer-related deaths[(3)].

Endometrial cancer can be divided into two types, based on the differences in histology and clinical outcomes: Type I tumors which are mainly endometrioid adenocarcinomas. They form the majority of endometrial cancers and are associated with unopposed estrogen stimulation. Type II tumors are mostly serous carcinomas and are estrogen independent. Type II tumors have poorer prognoses and are less well differentiated than type I tumors, also they account for 40% of endometrial cancer deaths, even though they only account for 10% to 20% of cases **(4).**

Many of the established risk factors for type I endometrial carcinomas are related to an imbalance between estrogen and progesterone exposures, including obesity and the use of unopposed estrogen therapy **(5).**

Other risk factors include early menarche, late menopause, nulliparity, polycystic ovarian syndrome and hereditary factors such as Lynch syndrome **(5).**

Type 2 endometrial carcinomas have been thought to differ from type 1 in various ways: the average age at diagnosis is older in most studies for type 2 disease **(6)**, obesity was not thought to be associated with type 2. However, there is evidence that obesity is a risk factor for all endometrial carcinomas **(7)**. Also, patients with type 2 tumors are mostly parous than nulliparous **(8)**.

Endometrial carcinoma usually presents with abnormal uterine bleeding (AUB), which is present in 75 to 90% of cases **(9).**

The Cancer Genome Atlas identified four subtypes to further characterize endometrial cancers: *POLE* ultramutated tumors, which has clinical significance, and adjuvant therapies are avoided. The other three types are: Microsatellite instability hypermutated, Copy number low and Copy number high **(5).**

The International Federation of Gynecology and Obstetrics (FIGO) and the American Joint Committee on Cancer (AJCC) have both established staging systems for endometrial carcinoma and the FIGO system is the most commonly used staging system **(10&11).**

In a study by the Gynecologic Oncology Group, several surgical-pathological risk factors and postoperative treatment were related to recurrence-free interval and recurrence site. In patients without extrauterine metastasis, both deep myometrial invasion and grade 3 histology were the greatest determining factors of recurrence. Also, the frequency of recurrence increased with the presence of affected pelvic nodes, adnexal metastasis, positive periaortic nodes, positive peritoneal cytology, capillary space involvement and involvement of the isthmus or cervix **(12).**

The primary treatment of endometrial carcinoma is surgery, which consists of abdominal or laparoscopic hysterectomy and bilateral salpingo-oophorectomy, with or without the evaluation if lymph nodes. The indication for adjuvant treatment is based on the presence of clinicopathological risk factors. Women with low or low-intermediate risk EC are treated with surgery alone **(13).** Those with high-intermediate risk EC commonly receive adjuvant radiotherapy, mostly vaginal brachytherapy (VBT). While those with high-risk EC (HR) typically receive pelvic external beam radiotherapy (EBRT) with or without adjuvant chemotherapy. In the case of substantial LVSI, it is preferred to use EBRT over VBT alone to increase the control of pelvic lymph nodes **(14)**. The role of adjuvant chemotherapy which is usually given in combination with EBRT, is the subject of multiple randomized trials, which showed increased relapse-free survival rates, and this is recommended in stage III disease and for serous cancers **(15).** In stage III and IV EC, maximal cytoreduction should be considered only if macroscopic complete resection is feasible **(16)**.

If upfront surgery is not feasible, then systemic therapy is usually given, and delayed surgery can be considered in case

there was a significant response to chemotherapy [17].

The combination of paclitaxel and carboplatin is the standard chemotherapy of choice for advanced/recurrent endometrial carcinoma based on a randomized phase 3 trial, which compared arboplatin- paclitaxel versus carboplatin-paclitaxel-anthracyclines and reported overlapping overall survival and progression-free survival between the two arms but an increased toxicity was reported with the triple combination [18].

Several anti PD-1 and anti PD-L1 checkpoint inhibitors have been reported to have activity in EC, so pembrolizumab was approved by the Food and Drug Administration (FDA) based on the results of a phase 2 single arm trial for the treatment of MSI-high (MSI-H)/MMRd solid tumors which have progressed on the standard treatment [19, 20].

AIM OF THE WORK

To analyse retrospectively epidemiological, clinicopathological features, treatment strategies and survival outcomes of patients diagnosed with endometrial carcinoma presented to Ain Shams University hospitals in Egypt in the period from January 2017 to December 2020.

PATIENTS AND METHODS

This study is a retrospective single institutional study that included 65 patients diagnosed with endometrial carcinoma attending the gastrointestinal and gynecological malignancies clinic at the Clinical Oncology Department, Ain Shams University, in the period between the start of January 2017 to the end of December 2020. Several epidemiological and clinicpathological factors of endometrial carcinoma were examined in this study to evaluate their significance and impact on survival.

Study Population:

Inclusion Criteria: All cases of endometrial carcinoma proved by histopathological examination.

Exclusion Criteria: Histopathology other than carcinoma e.g., sarcomas and medical files with incomplete data.

Sampling Method: Consecutive sampling (All medical records for patients fulfilling the eligibility criteria in the previously determined period was included in the study).

Sample size: Using EPI info 7 program for sample size calculation, setting confidence level at 95% and margin of error at 10%, it is estimated that sample size of 65 patients was needed to detect an expected one-year survival rate of 80%.

Ethical Considerations:

The study was approved by Ain Shams University research ethics committee and all our extracted data which included name, age, sex, pathological diagnosis, time of biopsy & time of the start of radiotherapy were kept confidential and the patients were kept unidentified.

Study Design:

Data were collected from potential files for the following variables: Baseline demographics and clinical information such as age, body mass index (BMI), family history for malignancies, special habits of medical importance, ECOG performance status (PS) at the time of diagnosis, comorbidities, and the use of hormonal therapy. Reproductive factors: parity, the age of menarche, menopause. Pathology details of biopsy and/or surgery: Histopathologic type, grade, myometrial invasion, cervical stromal invasion and LVSI. Staging based on staging established by the International Federation of Gynecology and Obstetrics (FIGO) and American Joint Committee on Cancer (AJCC), AJCC Cancer Staging Manual, 8th edition. New York, Springer, 2017.

Treatment strategies: Surgical procedure details, radiotherapy data such as aim, type, total dose, fractionation, regularity of the sessions (the course is considered interrupted if the interruption is ≥ 7 days) and any reported toxicity, chemotherapy data such as aim, regimen, number of cycles and any reported toxicities and any other type of treatment used.

Outcomes: disease-free survival (DFS), progression free survival (PFS), overall survival and objective response rate (ORR).

DFS is defined as the time from the date of primary surgery to the detection of recurrence, last follow-up or death.

Progression-free survival (PFS) is defined as the time elapsed between treatment initiation and tumor progression or death from any cause.

Overall survival is defined as time from diagnosis to either last follow-up or death**.**

ORR is defined as the proportion of patients with confirmed complete (CR)/partial response (PR) per RECIST version 1.1.

Data collection and statistical Analysis: The collected data was revised, coded and entered to the Statistical package for Social Science (IBM SPSS) version 23. P value is considered significant if ≤ 0.05.

Data entry: Data collected was entered in Ain Shams Clinical Oncology Registry (ASCOR).

RESULTS:

Patients' characteristics: The patients' age ranged from 40 to 83 years old, with mean age of 61.3 years. Most of the patients were postmenopausal 90.8%, the age of menarche ranged from 11 to 16 years and the age of menopause ranged from 29 to 57 years. Eleven patients (16.9%) were nulliparous, while 54 patients had children. The BMI ranged from 24.8 to 55 kg/m2, with a mean of 38.7 kg/m2. The most common comorbidity was hypertension (HTN) which was reported in 38 patients (58.5%), followed by diabetes mellitus (DM) in 36 patients (55.4%) and 16 patients (24.6%) had other comorbidities of medical significance, and only one patient was using tamoxifen as an adjuvant treatment to breast cancer.

Table (1): Characteristics of the study population.

		Min.	Max.	Mean	SD
Age (at presentation)		40.00	83.00	61.34	8.55
BMI		24.80	55.00	38.72	7.44
		N		%	
ECOG (PS) at time of diagnosis	1	53		81.5%	
	2	11		16.9%	
	3	1		1.5%	
Special habits	No	51		78.5%	
	Passive smoking	14		21.5%	
DM	No	29		44.6%	
	Yes	36		55.4%	
HTN	No	27		41.5%	
	Yes	38		58.5%	
Other comorbidity	No	49		75.4%	
	Yes	16		24.6%	
Family history of cancer	No	52		80.0%	
	Yes	13		20.0%	
Use of hormonal treatment/TAM	No	64		98.5%	
	Yes	1		1.5%	

Tumor variables:

The most common histological subtype of the pathologically examined tumors in our population was endometroid adenocarcinoma in 42 patients (64.6%), 14 pts had endometroid adenocarcinoma with squamous differentiation, 5 patients had serous carcinoma, and 4 had other types (papillary, mucinous, clear cell and anaplastic). Regarding the tumor grade, it was grade 1 (well differentiated) in 9 patients (13.8%), grade 2 (moderately differentiated) in 39 patients (60%), grade 3 (poorly differentiated) in 17 patients (26.2%). Myometrial invasion was more than 50% in 46 patients (71.9%) and less than 50% in 18 patients (28.1%) and the depth of myometrial invasion couldn't be assessed in one case as it was medically inoperable. Thirteen patients (20.3%) had cervical stromal invasion. Lymphovascular space invasion (LVSI) was present in 9 patients (14.1%). Seven patients had lower uterine segment infiltration. The peritoneal cytology was positive in 2 patients (3.1%), and the surgical margins were involved in only one case. Regarding the FIGO staging, the most common stage was stage 1B in 32 patients (49.2%) while 13 patients (20%) had stage 1A, 9 patients had stage 2, 11 patients had stage 3.

Treatment variables:

Regarding surgical intervention, 64 patients underwent surgery while one case was medically inoperable. Out of the 64 cases who underwent surgery, 58 patients underwent total abdominal hysterectomy and bilateral salpingo-oophorectomy (TAH & BSO), three patients underwent subtotal abdominal hysterectomy & BSO, one underwent vaginal hysterectomy & BSO, one underwent simple hysterectomy and one case underwent TAH with unilateral salpingo-oophrectomy.

Concerning the adjuvant treatment, 24 patients (36.9%) received adjuvant chemotherapy; of whom 23 patients received paclitaxel/ carboplatin, the number of cycles of chemotherapy ranged from 3-8 cycles, while one patient received concurrent chemoradiation with cisplatin. Out of the 24 patients who received adjuvant chemo-therapy, 15 patients developed chemo-therapy- related toxicities, but none of which led to serious events causing treatment interruption.

Regarding radiotherapy, 59 patients (90.8%) received EBRT. The total dose ranged from 45 to 60 Gy. The course of radiotherapy was interrupted in 23 patients. Seven patients developed radiotherapy-related toxicities. Three patients in our study population received brachytherapy.

Outcomes:

Overall, of the 65 patients in the present study, 11 patients (16.9%) died and 54 patients (83.1%) were still alive till the end of our last follow-up on 23/10/2022. The mean OS was 57.86 months while the mean DFS was 49.43 months.

None of the patients in our study were metastatic from the start. Recurrence occurred in 4 patients from our studied sample, 2 of them had local recurrence, one had systemic recurrence and one had both local and systemic recurrence. Among the 4 patient who developed recurrence, 3 patients received first line metastatic treatment and one patient died before receiving any treatment.

The median PFS was 8 months and the ORR was 40% as only 2 patients had either CR or PR.

Factors affecting mortality:

Multiple prognostic factors were analyzed to evaluate their impact on mortality. Among the investigated prognostic variables, only the FIGO staging and depth of myometrial invasion had statistically significant impact on mortality as shown in table (2).

Table (2): Factors affecting mortality:

		Mortality				t*	P value
		Yes		No			
		Mean	SD	Mean	SD		
Age (at presentation)		61.82	5.98	61.24	9.03	0.20	0.84
		N	%	N	%	X^{2**}	P value
DM	Yes	5	13.9%	31	86.1%	0.53 FE	0.52
	No	6	20.7%	23	79.3%		
HTN	Yes	6	15.8%	32	84.2%	0.08 FE	1.00
	No	5	18.5%	22	81.5%		
Other comorbidities	Yes	3	18.8%	13	81.3%	0.05 FE	1.00
	No	8	16.3%	41	83.7%		
ECOG (PS) at time of diagnosis	1	10	18.9%	43	81.1%	0.91 FE	0.73
	2	1	9.1%	10	90.9%		
	3	0	0.0%	1	100.0%		
Type	Endometroid adenocarcinoma	7	16.7%	35	83.3%	0.98 FE	0.94
	Endometroid adenocarcinoma with squamous differentiation	2	14.3%	12	85.7%		
	Serous carcinoma	1	20.0%	4	80.0%		
	Other	1	25.0%	3	75.0%		
Grade	1	1	11.1%	8	88.9%	0.83 FE	0.64
	2	6	15.4%	33	84.6%		
	3	4	23.5%	13	76.5%		
Myometrial invasion	<50%	0	0.0%	18	100%	5.20 FE	0.03
	≥50%	11	23.9%	35	76.1%		
Cervical invasion	No	8	15.7%	43	84.3%	0.40 FE	0.68
	Yes	3	23.1%	10	76.9%		
		N	%	N	%	X^{2**}	P value
LVSI	No	8	14.5%	47	85.5%	1.92 FE	0.18
	Yes	3	33.3%	6	66.7%		
Lower uterine segment infiltration	No	10	17.5%	47	82.5%	0.05 FE	1.00
	Yes	1	14.3%	6	85.7%		
Peritoneal cytology	Negative	10	16.1%	52	83.9%	1.56 FE	0.32
	Positive	1	50.0%	1	50.0%		
FIGO	IA	0	0.0%	13	100.0%	10.41 FE	0.03
	IB	6	18.8%	26	81.3%		
	II	1	11.1%	8	88.9%		
	IIIA	1	16.7%	5	83.3%		
	IIIB	1	33.3%	2	66.7%		
	IIIC	2	100%	0	0.0%		
adjuvant Chemotherapy	No	5	12.2%	36	87.8%	1.77 FE	0.30
	Yes	6	25.0%	18	75.0%		
Regularity of RTH	Regular	4	11.1%	32	88.9%	2.24 FE	0.17
	Interrupted	6	26.1%	17	73.9%		
Recurrence	No	8	13.6%	51	86.4%	3.73 FE	0.12
	Yes	2	50.0%	2	50.0%		

*Student t test **Chi square test (FE: Fisher Exact)

Prognostic factors affecting overall survival and disease-free survival:

The FIGO staging had statistically significant impact on prognosis and survival. The 5-year OS for stage IA was 100% with a median OS of 34 months, 81% for stage IB, 88.9% for stage II, 83% for stage IIIA, 66.7% for stage IIIB and none of those with stage IIIC survived till the end of our study with a median OS of 10 months (p<0.001). FIGO staging also had statistically significant impact on DFS with an overall mean DFS of 49.4 months (p < 0.001), FIGO III C had the shortest mean DFS of 9.5 months.

A. Effect of FIGO staging on overall survival and disease-free survival:

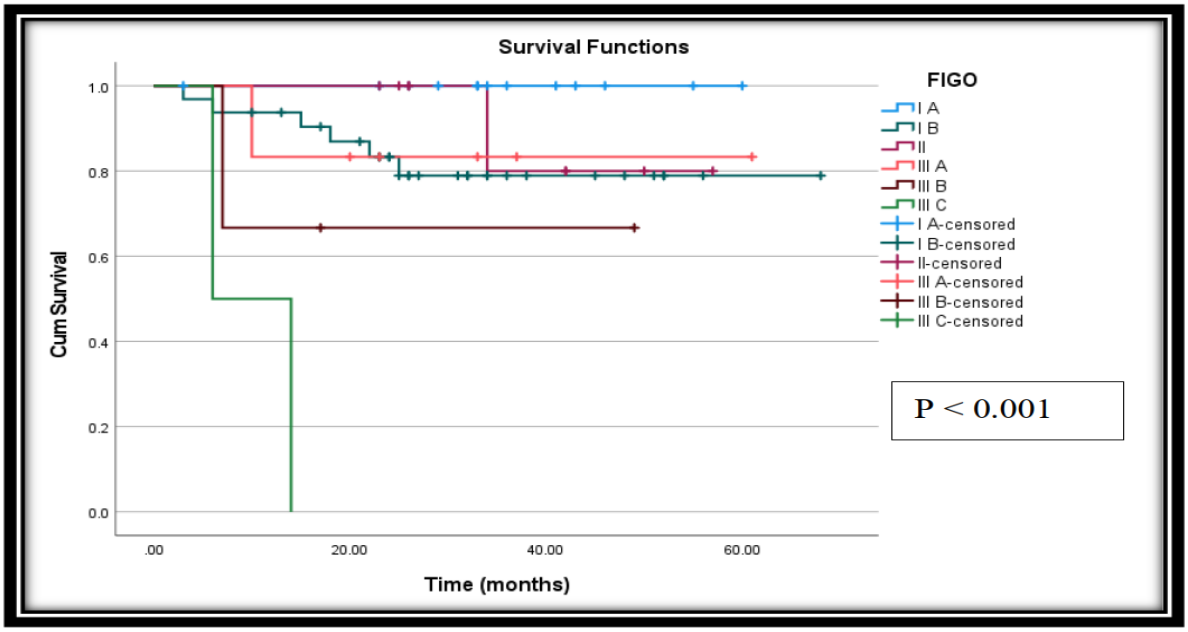

Figure (1): Effect of FIGO staging on overall survival.

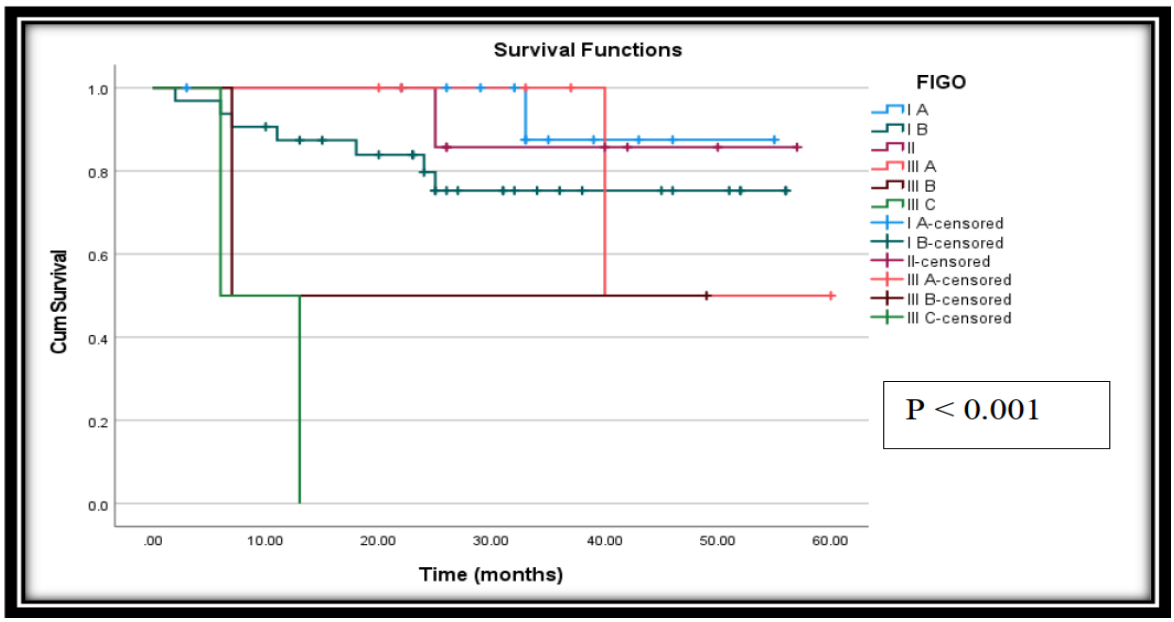

Figure (2): Effect of FIGO staging on disease-free survival

The depth of myometrial invasion had statistically significant impact on OS. Patients who have myometrial invasion <50% had better OS (P = 0.025). The median OS for patients with myometrial invasion 50% was 35 months and for those with myometrial invasion >50% was 25 months.

Also the depth of myometrial invasion had statistically significant impact on DFS, the mean DFS for those with myometrial invasion >50% was 43.58 months compared to 57.5 months for those with less than 50% myometrial invasion. (P = 0.055).

B. Effect of myometrial invasion on overall survival and disease-free survival:

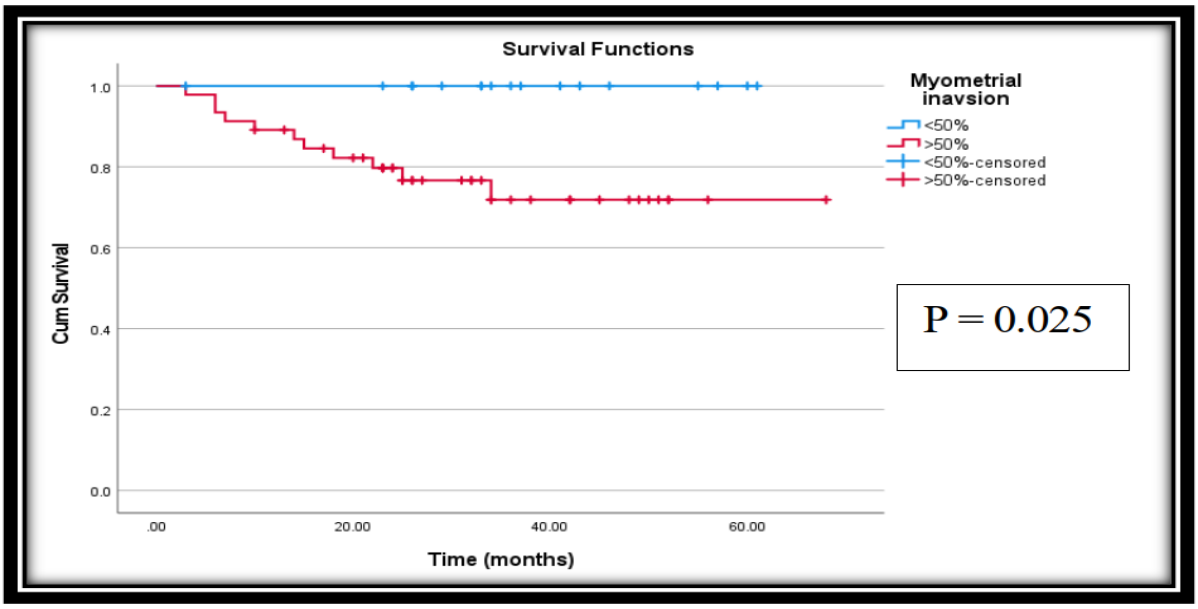

Figure (3): Effect of myometrial invasion on overall survival.

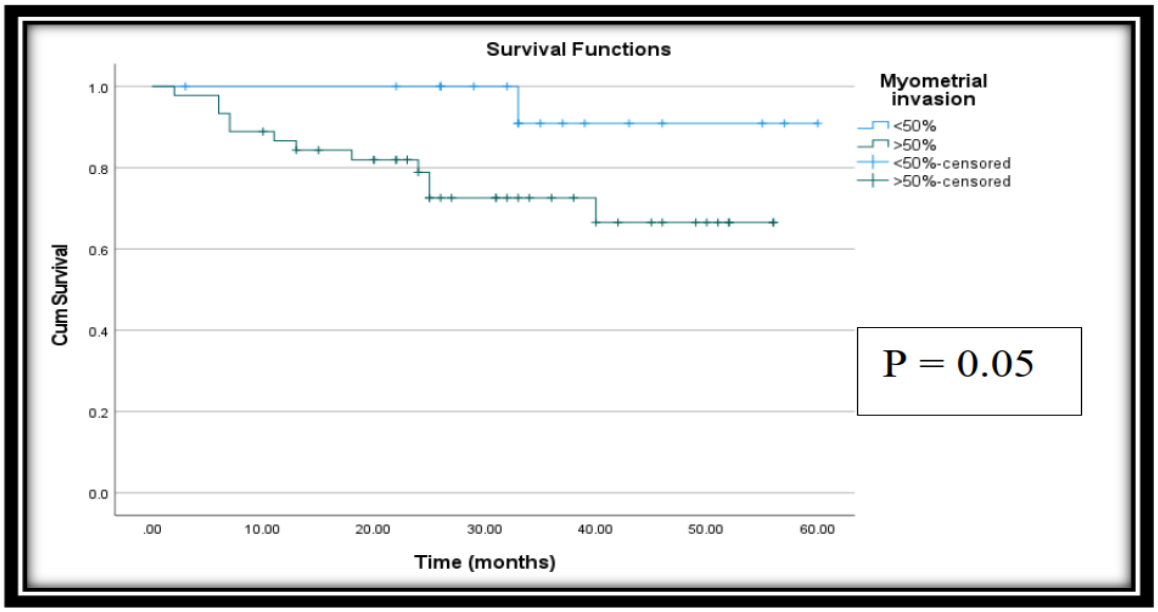

Figure (4): Effect of myometrial invasion on disease-free survival.

Correlation between different prognostic factors and recurrence:

Many prognostic factors were evaluated for correlation with recurrence but none of them was statistically significant.

DISCUSSION:

This study is a retrospective study that included 65 patients diagnosed with endometrial carcinoma attending the gastrointestinal and gynecological malignancies clinic at the Clinical Oncology Department, Ain Shams University, in the period between the start of January 2017 to the end of December 2020.

In the present study, we examined the epidemiological and clinicopathological factors of endometrial carcinoma to evaluate the significance of these factors and their impact on survival.

The mean age at diagnosis in our study was 61.34 years (range 40-83 years), similarly a study was conducted in Nigeria showed that the mean age of women with endometrial cancer at diagnosis was 62.2 ± 5.5 years (range 39 – 80 years), which is also consistent with the mean age observed in the US, which is 62 years **(21).**

A meta-analysis study indicated that age at menopause was positively associated with the risk of endometrial cancer. When the menopausal age of women exceeded 46.5 years, the risk of endometrial cancer increased with her menopausal age **(22).**

Most of the patients in the current study were postmenopausal 90.8%, and the mean age at menopause was 48.5 years. Similarly, a study conducted in Spain showed that 87% (n = 241) of the women were menopausal **(23).**

Many studies had investigated BMI as a risk factor for endometrial carcinoma, according to **Bhaskaran el al**., women with a normal BMI have a 3% lifetime risk of endometrial cancer, but for every 5-unit increase in the BMI, the risk of cancer increases by more than 50% **(24).**

Also a meta-analysis of seven cohort studies and eleven case-control studies showed that the conditions of excess body weight ([EBW] defined as [BMI] ≥25 kg/m2), obesity (BMI ≥30 kg/m2) and overweight (25< BMI <30 kg/m2) were associated with an increased risk of endometrial cancer (relative risk [RR] for EBW=1.62; for obesity RR=2.54; for overweight RR=1.32) **(25)**. The BMI of our study population ranged from 24.8 to 55 kg/m2 and 63% of the patients had BMI ≥30 kg/m2.

A systematic review and meta-analysis of 29 cohort studies examined the association between DM and EC incidence and disease-specific mortality, and it showed that there is consistent evidence for an independent association between DM and an increased risk of incident EC, while there is an uncertain association between DM and EC-specific mortality. The summary (RR) for incidence of endometrial cancer among women with versus without DM was 1.89 ($p < 0.001$) and the summary incidence rate ratio was 1.61 ($p < 0.001$). The pooled RR of disease-specific mortality was 1.32 ($p = 0.003$), while results in the studies reporting standardized mortality ratios were inconsistent **(26).**

A survey-based prospective study done by **Folsom et al.**, evaluated 415 women, women with endometrial cancer and DM had 50% survival rate compared with non-diabetic patients, it also found that HTN was not a significant predictor of mortality **(27).** Also another study by **Kauppila et al.**, followed 1113 patients with endometrial cancer and found that there is 21% decrease in survival in diabetic patients with stage I endometrial cancer and it had similar findings for HTN with the exception for patients with severe or stage II HTN **(28).**

Our data showed that 55.4% (n = 36) of the patients had DM and 58.5% (n = 38) of

the patients had HTN. Upon investigating the impact of DM and HTN on survival, neither of them was a significant predictor of mortality.

There were several limitations in the current study to conclude a significant association between DM and endometrial cancer. Diabetes status was based exclusively on past medical history; thus, there was a chance of misclassification, which may have led to underestimation of the number of patients with DM.

The 5-year overall survival at our study was 83.1%, which is similar to the data reported by other studies where it was of 81% in a study conducted by ***Tejerizo-García et al.*** [(23)]**,** and of 80% in a study of 8,110 patients conducted by ***Creasman et al.*** [(29)]**.**

Also, the 5-year disease free survival of 79.4% found in the present study is similar to the 81% found by ***Li et al.*** [(30)]**,** in a study of 265 patients.

In the present study, FIGO staging has been shown to affect significantly the OS, disease-free survival and mortality which was also demonstrated in multiple studies. In a study of 41,120 patients diagnosed with EC conducted by ***Kosary et al.*** [(31)]**,** the overall survival rate at 5 years for stage IA was 93.4% and a significant decline in survival was seen with each stage compared to stage IA, patients with stage III had 5-year surgical of 48.1%, which is also consistent with the data reported by ***Steiner et al.*** [(32)]**.**

Also the results of another study conducted in Japan were consistent with the results of our study where the 5-year relapse free survival for stage I was 95.5%, stage II 88.3%, stage III 67.8%[(33)], and in our study the DFS for the different stages was: 92.3% for stage IA; 78.1% for stage IB; 87.5% for stage II; and 60% for stage III ($p<0.001$).

The depth of myometrial invasion was another factor that was significantly affecting the OS in our current study. Similarly, the 5-year OS rate in a study carried out by Dane et al. was 96 % for patients with myometrial invasion < 50 % and 66 % for those with myometrial invasion > 50 % [(34)]**.** Also another study by ***Gadduci el al.*** [(35)]**,** reported that the overall survival was significantly associated with myometrial invasion, the 5-year OS was 94.7% for those with myometrial invasion < 50% and 75.2% for those with myometrial invasion ≥ 50%.

Medical records of 131 patients were reviewed by Pangidd et al. and they found that LVSI, along with other factors such as deep myometrial invasion, advanced FIGO stage and poor histological grade, were significantly correlated with lymph node metastasis and poor OS. The estimated 5-year survival rates of non-obese patients with and without LVSI were 40% and 81%, respectively ($P = 0.01$) [(36)]**.** Another study reviewed 513 cases of endometrial carcinoma and studied the clinico-pathologic features, and it revealed that LVSI was the only independent predictor for distant recurrence [(37)]**.**

Our data showed that the 5-year OS for those with LVSI was 66.7% and 85.5% for those without LVSI, however it was statistically insignificant. This is likely due to the small number of patients with reported LVSI (9 patients in total) ($p = 0.162$).

Even though peritoneal cytology is no longer considered in the staging system for endometrial carcinoma, its prognostic and predictive value is debatable. In an analysis of 14,704 women with stage I/II endometrial cancer using information from the Surveillance, Epidemiology, and End Results (SEER) database, there was an increased risk of death among women with positive washings [(38)]. Another study analyzed 16,851 women with stage I/II endometrial cancer using the National Cancer Database (NCDB), and 953 had positive washings. The 4-year OS rate for those with positive cytology was 79.5%, while the 4-year OS rates for those with negative washings was 92.2% for stage IA, 83.4% for stage IB, and 86.9% for stage II [(39)].

Only two patients in our study had positive peritoneal cytology and their mean OS was 27.5 months, compared to 58.26 months for those with negative washings, but it was statistically insignificant (p = 0.24).

In a study of 181 patients with endometrial cancer by **Steiner et al.**, the histopathologic tumor type was documented as an independent prognostic factor for recurrence-free survival and mortality. A significantly increased OS and recurrence-free survival were reported in that study for patients with adenocarcinoma as compared to other histopathologic types [(32)].

In another study by ***Tejerizo-García et al.*[(23)],** patients with endometrioid tumors had a significantly higher DFS rate of 89.6%, compared to 61.9% for patients with other tumor types, such as clear cell, serous-papillary, and undifferentiated carcinomas.

Despite the previous reported results of various studies, the histopathological tumor type didn't show any statistically significant impact on survival or recurrence in our study.

Creasman and his colleagues reported that both grade and depth of myometrial invasion are prognostically important within any given stage. The 5-year OS of Stage Ia G1 was 93% compared with 91% in those with Stage Ib G1, but Stage Ia G3 has an 80% OS compared with 75% in those with Stage Ic G3 and it applies to the all other stages [(29)]**.** Similarly, in a study conducted by ***Hanson et al.*[(40)],** the 5-year DFS was 96.3% in G1 endometrial carcinoma, 80.8% in G2 and 66.7% in G3, and the OS was 95.6% in G1, 82.1% in G2, and 61.9% in G3. Also the poorly differentiated tumors had a similar unfavorable effect on survival. However in our study, tumor grade didn't have any impact on survival.

In the present study, 90.8% of the patients (n = 59) received EBRT, and 24 patients received chemotherapy; 23 patients received adjuvant paclitaxel/carboplatin and one received concurrent chemoradiation with cisplatin. Upon analyzing the effect of adjuvant treatment on survival and recurrence, neither the adjuvant radiotherapy nor the chemotherapy had a statistically significant impact on survival or recurrence. This finding maybe due to the retrospective, non-randomized nature of the study. In addition, the small number of the study population didn't allow us to draw conclusions regarding the impact of adjuvant treatment on the pattern of recurrence as different methods of treatment couldn't be compared.

Our study has limitations due to the retrospective nature of collection of data through hospital medical records. This has the potential for incomplete data collection due to missing data in the records. Also, lack of standardization of both laboratory and imaging investigations due to variability of laboratory and personal evaluation.

Secondly, this is a single center study and it might be argued that the results couldn't be generalized to the entire local population. However, our hospital is a major tertiary care center treating patients from all over the country, we can speculate our results are representative of our population.

Conclusion:

We conclude that the depth of myometrial invasion and FIGO stage are factors of prognostic significance and are strong predictors of survival, also that the knowledge of the various prognostic factors and their impact on survival may enable physicians to find the best treatment approach.

Conflict Of Interest:

The authors declare that they have no conflicts of interest.

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الملامح الوبائية للمرضي المصابين بسرطان بطانة الرحم في قسم الأورام السريرية في مستشفيات جامعة عين شمس في مصر

ميرنا احمد خيري ابو العلا وخالد الحسينى نصر وعمرو شفيق توفيق ونسرين احمد مسلم وهاجر ابراهيم الغزاوي ولمياء مصطفى عبد المجيد

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الخلفية: سرطان بطانة الرحم هو الورم الخبيث النسائي الأكثر شيوعًا في البلدان ذات الدخل المرتفع والسادس الأكثر شيوعًا بين الإناث. في عام ٢٠٢٠، كان هناك ما يقدر بنحو ٤١٧٠٠٠ حالة جديدة تم تشخيصها و٩٧٠٠٠ حالة وفاة بسبب المرض في جميع أنحاء العالم. ينقسم سرطان بطانة الرحم إلى نوعين على أساس الاختلافات في الأنسجة والنتائج السريرية. أثبتت العديد من الدراسات أهمية العوامل المتنبئة المختلفة بما في ذلك الأنواع النسيجية المختلفة، درجة النسيج، مرحلة المرض، عمق غزو عضلة الرحم، غزو الوعاء اللمفاوي، إيجابية الخلايا بالسائل البريتوني ووصول الورم الى عنق الرحم.

هدف العمل: تحليل الخصائص الوبائية والإكلينيكية واستراتيجيات العلاج ونتائج البقاء على قيد الحياة بأثر رجعي للمرضى الذين تم تشخيص إصابتهم بسرطان بطانة الرحم في مستشفيات جامعة عين شمس في مصر في الفترة من يناير ٢٠١٧ إلى ديسمبر ٢٠٢٠.

المرضى والطرق: هذه الدراسة عبارة عن دراسة استعادية شملت ٦٥ مريضًا تم تشخيص إصابتهم بسرطان بطانة الرحم في عيادة أورام الجهاز الهضمي وأورام النساء الخبيثة بقسم الأورام السريرية بجامعة عين شمس، في الفترة من بداية يناير ٢٠١٧ حتى نهاية ديسمبر ٢٠٢٠. تم فحص العديد من العوامل الوبائية والإكلينيكية لسرطان بطانة الرحم في هذه الدراسة لتقييم أهميتها وتأثيرها على البقاء على قيد الحياة.

النتائج: كان متوسط العمر عند التشخيص في دراستنا ٦١,٣٤ سنة، وكان معظم المرضى في سن ما بعد انقطاع الطمث ٩٠,٨٪ وتراوح مؤشر كتلة الجسم من ٢٤,٨ إلى ٥٥ كجم / م ٢ بمتوسط ٣٨,٧ كجم / م ٢. كان معدل البقاء على قيد الحياة لمدة ٥ سنوات في دراستنا ٨٣,١٪ بمتوسط ٥٧,٨٦ شهرًا، وكان البقاء على قيد الحياة خاليًا من المرض لمدة ٥ سنوات ٧٩,٤٪ بمتوسط ٤٩,٤٣ شهرًا. من بين العوامل الإنذارية المتنبئة التي تم تحليلها، أظهرت مرحلة الورم FIGO stage وعمق غزو عضلة الرحم نتائج ذات دلالة إحصائية للتأثير على معدل البقاء على قيد الحياة. كان إجمالي البقاء على قيد الحياة ١٠٠٪ للمرحلة IA بمتوسط ٣٤ شهرًا، و٨١,٣٪ للمرحلة IB، و٨٨,٩٪ للمرحلة II، و٨٣,٣٪ للمرحلة IIIA، و٦٦,٧٪ للمرحلة IIIB ولم ينج أي من أولئك الذين لديهم المرحلة IIIC حتى نهاية دراستنا بمتوسط ١٠ أشهر ($p<0.001$). كان معدل البقاء على قيد الحياة لأولئك الذين يعانون من غزو عضلة الرحم اقل من ٥٠٪ هو ١٠٠٪ بينما كان أولئك الذين يعانون من غزو عضلة الرحم أكثر من ٥٠٪ هو ٧٦,١٪ ($p = 0.025$).

الخلاصة: نستنتج أن عمق غزو عضلة الرحم ومرحلة الورم FIGO stageهما عوامل ذات أهمية تنبؤية ولها معدل تنبوء قوي للبقاء على قيد الحياة، كما أن معرفة العوامل التنبؤية المختلفة وتأثيرها على البقاء على قيد الحياة قد تمكن الأطباء من إيجاد أفضل نهج علاجي.