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Original Research Article

Insights into endometrial cancer profiles and its pattern of recurrences: a study from a leading health center in eastern Morocco

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ABSTRACT

Background: Endometrial cancer (EC) is a rising gynecological malignancy, particularly in low- and middle-income countries. This study explored the demographic, clinical, and pathological features of women with EC in eastern Morocco.
Methods: A retrospective review of 60 cases of histologically confirmed EC was conducted at Mohammed VI University Hospital, Oujda, from January 2016 to January 2024. Data included demographics, clinical symptoms, diagnostics, treatments, and risk factors.
Results: The mean age was 56 years, with 80% aged 50-70. Most patients (60%) resided in urban areas, and 90% were nonsedentary housewives. Vaginal bleeding was the main symptom (87%). Early-stage disease (stage I) was predominant (70%), with endometrioid carcinoma accounting for 65% of cases. Tumor grades were 40% grade I, 45% grade II, and 15% grade III, with >50% myometrial invasion in 45%. Risk factors included postmenopausal status (80%), nulliparity (43%), and overweight (46%), while hypertension and diabetes affected 30% and 20%, respectively. Treatment involved total hysterectomy with bilateral salpingo-oophorectomy (45%) or radical hysterectomy (18.3%). Adjuvant therapy was administered to 76.7%, with 11.7% receiving combined chemo-radiotherapy. Based on ESMO-ESGO-ESTRO risk classification, 60% were low-risk, while high-risk cases showed higher recurrence and poorer outcomes.
Conclusions: EC in Morocco is often detected at an early stage, predominantly affecting postmenopausal women. Efforts should focus on early diagnosis and customized treatment strategies for high-risk patients to improve outcomes.

Keywords: Endometrial cancer, Morocco, North Africa, Postmenopausal, Prognosis, Recurrence, Risk factors

INTRODUCTION

Endometrial cancer (EC) is one of the most common gynecological malignancies, with a global incidence of 417,367 cases in 2020, accounting for 2.2% of newly diagnosed cancers.[1] Its incidence is rising, with a projected increase of over 50% by 2040.[1] Higher rates are reported in high-income countries, while lower rates are observed in regions like South-Central Asia and Africa.[2,3] This rising incidence may be linked to decreasing rates of hysterectomy for benign causes.[4] In Morocco, the exact incidence of EC is unclear due to limitations in cancer registration and healthcare resources. Known risk factors include prolonged estrogen exposure, early menarche, late menopause, nulliparity, obesity, and comorbidities such as diabetes and hypertension. Most cases are diagnosed in postmenopausal women, with endometrioid carcinoma being the most prevalent subtype.

The objective of this study was to identify and describe the epidemiological, clinical, and pathological characteristics of endometrial cancer among women in eastern Morocco, providing insights into disease presentation and management in this population.

METHODS

This study retrospectively analyzed data from women treated for endometrial cancer at the Mohammed VI University Hospital, a tertiary care center in Oujda (faculty of Mohammed first, Oujda), eastern Morocco, between January 2016 and January 2024. Among the gynecological malignancies registered in the department of gynecology during this period, 60 patients were found to have histopathologically confirmed endometrial carcinoma. The patients' case histories were reviewed, and sociodemographic data were collected, including age at presentation, occupation, residence, and substance addiction. Additionally, information on clinical presentation, diagnostic procedures, and therapeutic interventions was analyzed. The study assessed also known risk factors such as age at menarche and menopause, parity, obesity, use of oral contraceptive pills, hormone replacement therapy (HRT), and comorbidities like hypertension and diabetes. Body mass index (BMI) was calculated using weight (kg) and height (cm) according to standard techniques, adhering to the WHO definitions for overweight (BMI 25-29 kg/m^2) and obesity (BMI >30 kg/m^2). Women were considered premenopausal if they reported regular menses in the past 12 months. Data were analyzed, with results presented as mean±standard deviation and frequency.

RESULTS

The mean age of the patients at diagnosis of endometrial cancer was 56 years. Majority of the patients (80%, n=48) were in the age group of 50-70 years, only one patient was 24 years old at the time of diagnosis.

Table 1: Sociodemographic profile of patients.

Age of diagnosis (year)	N	%
<40	1	1.6
41-50	6	10.3
51-70	48	80
>70	5	8.1
Age at menarche (years)		
≤13	42	70
>14	18	30
Menopausal status		
premenopausal	12	20
postmenopausal	48	80
Age at menopause (years)		
<50	56	93.4
>51	4	6.6
Parity		
Nulliparous	26	43.3
1-3	20	33.4
> 4	14	23.3
Comorbidities		
Hypertension	18	30
Diabetes	12	20
Hypothyroidism	0	0
No comorbidity	30	50
Addiction		
Smoking	3	5
Alcohol	2	3.3
No addiction	55	91.7
BMI		
Underweight (<18.6)	2	3.2
Healthy (18.6-24.9)	10	16.7
Overweight (25-29.9)	28	46.7
Obese (>30)	20	33.3
Symptoms		
Bleeding per vagina	52	87
Abdominal pain	8	13
Place of residence		
Rural	24	40
Urban	36	60

Table 2: Tumor characteristic of patients.

Histology	N	%
Endometrioid adenocarcinoma	39	65
Squamous cell carcinoma	1	1.7
Adenosquamous carcinoma	2	3.3
Serous carcinoma	10	16.7
Mixed Mullerian malignant tumor	3	5
Endometrioid stromal sarcoma	3	5
Clear cell adenocarcinoma	2	3.3
Tumor grade		
Grade 1	24	40
Grade 2	27	45
Grade 3	9	15
Disease stage		
Stage I	42	70
Stage II	12	20
Stage III	4	6.5
Stage IV	2	3.5
Percentage of myometrial invasion		
<50	33	55
>50	27	45
Lymph node metastasis		
Yes	20	33.3
No	40	66.7
Unknown	0	0
Ascites cytology		
Positive	6	10
Negative	18	30
Unknown	36	60
Type of surgery		
TH/BSO	27	45
RH/BSO	11	18.3
TH/BSO + PL	9	15
RH/BSO + PL	6	10
TH/BSO/PL +PAL	2	3.3
TH/BSO + CRS	1	1.7
none	4	6.7
Adjuvant therapy		
Chemotherapy	12	20
External beam radiotherapy	24	40
EBRT+ VBT	2	3.3
CT+RT	7	11.7
Hormonal therapy	1	1.7
No	14	23.3
ESMO-ESGO-ESTRO classification		
Low risk	36	60
Intermediate risk	4	6.7
High intermediate risk	8	13.3
High risk	12	20

The occurrence rates of other factors are presented in Table 1.

The data on known risk factors for endometrial carcinoma revealed that 80% (n=48) of the patients were postmenopausal, while only 20% (n=12) were premenopausal. The mean age at menarche was 13 years, with 70% (n=48) of patients experiencing menarche at or before this age. The mean age of menopause was 47 years, and 6.6% (n=4) of patients reached menopause at 51 years

or older. The biggest subset of patients, about 43.3 % (n=26) were nulliparous, and 33.4% (n=20) had fewer than four children. Additionally, 46.7% (n=28) of patients were overweight, and 33.3% (n=20) were obese. Most patients (95%) had no history of addiction. Hypertension was present in 30% (n=18) of the patients, and 20% (n=12) had diabetes as a comorbidity. The most frequent clinical symptom was vaginal bleeding, reported by 87% (n=52) of the patients, followed by abdominal in 13% of cases (n=8).

The clinical evaluation also indicates that 70% (n=42) of patients had stage I disease, followed by 20% (n=12) with stage II, 6.5% (n=4) with stage III, and 3.5% (n=2) with stage IV disease. Diagnosis was confirmed through histopathological examination in all patients. Endometrioid carcinoma was the most common variant, observed in 65% (n=39) of patients. Other less common variants included mixed Mullerian malignant tumor, squamous, adenosquamous, serous, and endometrioid stromal tumors (Table 2). Grade I tumors were present in 40% (n=24) of the specimens, grade II in 45% (n=27), and grade III in 15% (n = 9). At the time of presentation, 45% (n=27) of cases had >50% myometrial invasion, whereas 55% (n=33) had <50% myometrial invasion.

Twenty-seven (45%) patients received total extrafascial hysterectomy with bilateral salpingoopherectomy (TH/BSO), while eleven other patients (18.3%) received radical hysterectomy with bilateral salpingoopherectomy (RH/BSO), 9 (15%) received TH/BSO and pelvic lymphadenectomy (PL), 6 (10.0%) received RH/BSO/PL, 2 (3.3%) received TH/BSO/PL and para-aortic lymphadenectomy, 1 (1.7%) received TH/BSO and cytoreduction surgery. For the patient requiring primary cytoreductive surgery, an optimal resection was obtained. After the surgery, 76.7% patients (n=46) received adjuvant therapy, 3.3% requiring both EBRT and VBT, 12 other patients (20%) with chemotherapy alone, 24 (40%) with external beam radiotherapy, 7 (11.7%) with both chemotherapy and radiotherapy, and 1 (1.6%) with hormonal therapy.

Table 3: Outcomes, and first recurrence characteristics according to ESMO-ESGO-ESTRO subgroups.

	Low risk 60% (n=36)	Intermediate risk 6.7% (n=4)	High-intermediate risk 13.3% (n=8)	High risk 20% (n=12)
Outcomes (%)				
Deaths	0	0	1	1
Recurrence	6 (16.7)	1 (25)	3 (37.5)	6 (50)
Sites of recurrence				
No recurrence	30	3	4	5
Vaginal vault	2	1	2	3
Nodal (pelvic/para-aortic)	4	1	3	6
Central pelvic	1	0	0	3
Peritoneal carcinomatosis	0	0	1	2
Bone	1	0	0	0
Visceral	1	0	0	1
Brain	0	0	0	0
Number of patients with loco-regional recurrences	3	1	2	2
Mean time to regional recurrence (months±SD)	24±34.9	30±25.2	20±19.8	17±20.7
Number of patients with distant recurrence	3	0	1	4
Mean time to distant recurrence (months±SD)	30±12.8	-	19.3±15.9	15.94±20.8

Evolution

The data from 60 women revealed that the majority of patients fall into the low-risk category (60%, n=36), followed by high-risk (20%, n=12), high-intermediate risk (13.3%, n=8), and intermediate risk (6.7%, n=4). There were no deaths in the low-risk and intermediate-risk groups, while one death occurred in both the high-intermediate and high-risk groups. Recurrence rates increased with risk level: 16.7% (n=6) for low risk, 25% (n=1) for intermediate risk, 37.5% (n=3) for high-intermediate risk, and 50% (n=6) for high risk. Recurrences occurred at various sites, with higher-risk groups experiencing more diverse and multiple sites of recurrence. Loco-regional recurrences were relatively low across all risk categories, with the highest in the high-risk group (2 patients), and mean time to regional recurrence decreased with increasing risk, from 30±25.2 months in

the intermediate-risk group to 17±20.7 months in the high-risk group. Distant recurrences were more frequent in the high-risk group (4 patients), with the shortest mean time to distant recurrence in this group (15.94±20.8 months). Overall, higher-risk groups showed higher recurrence rates, shorter times to recurrence, and more diverse recurrence sites, indicating worse outcomes compared to low-risk patients who had fewer recurrences and no deaths.

DISCUSSION

This clinico-epidemiological study of endometrial carcinoma in Moroccan women, especially in its eastern region, provides valuable insights into the demographic, clinical, and pathological characteristics of the patient cohort, offering a comprehensive overview that can inform future research and clinical practice.

Demographics and lifestyle factors

The majority of patients diagnosed with endometrial carcinoma were aged between 50 and 70 years, with a mean age of 56 years, consistent with existing worldwide literature that identifies postmenopausal women as the primary demographic affected by this cancer.[3,4] The prevalence of patients from urban areas (60%) and the high proportion of housewives with nonsedentary lifestyles (90%) highlight potential socio-environmental factors that could be explored in further research.

Clinical presentation and disease staging

Postmenopausal vaginal bleeding was the primary presenting symptom in 87% of cases, which aligns with previous studies indicating that abnormal uterine bleeding after menopause is a common early symptom of endometrial carcinoma.[2] Notably, 70% of patients presented with stage I disease, suggesting that early detection is relatively common, potentially due to the clear and noticeable symptoms that prompt early medical consultation. However, the presence of advanced-stage disease in 10% of patients underscores the need for heightened awareness and potentially improved screening methods in Morocco.

Reproductive and health characteristics

Endometrial cancer is a disease of postmenopausal women; The majority (80%, n=55) of the patients in our study were postmenopausal. While only 20% (n=12) had disease before attaining menopause. Our findings are consistent with Gottwald et al and Bosch et al respectively, who reported incidence figures of 87.3% and 70%, respectively.[5,6]

The mean age at menarche was 13 years, with 70% (n=48) of patients experiencing menarche at or before this age. Meanwhile, the mean age of menopause was 47 years, and 6.6% (n=4) of patients reached menopause at 51 years or older. Early age of menarche and late age of menopause are two risk factors related to increased risk for uterine cancer.

About 30% (n=18) of the patients had hypertension and 20% (n=12) has diabetes as comorbidity. Coinciding with different literature like Zachary Nicholas et al reported in his study that 47% patients had hypertension and 26% had diabetes mellitus.[7] Both diabetes mellitus and hypertension affect survival in patients of endometrial carcinoma and thus relevant in its implication in endometrial cancer patients.[8]

The data also revealed that 46.7% (n=28) of the patients were overweight and 33.3% (n=20) were obese, aligning with findings from various studies.[9,10] In contrast, Jimenez-Lopez et al reported that among 358 patients, only 9% (n=31) had a BMI≥30 kg/m^2.[11] Additionally, 32.5% (n=28) had a normal BMI, and 5% (n=4) were underweight.

Histological and pathological findings

Endometrioid carcinoma was the predominant histological type in our study, constituting 65% of cases. This is in line with other studies where endometrioid carcinoma is the most frequently observed subtype of endometrial cancer.[12-14]

The prognostic factors that adversely affects the long-term survival of EC aside from age at diagnosis, multiparity are the advanced disease stage, myometrial invasion more than 50%, grade II and grade III tumors and lympho-vascular space invasion.

In the present study, after complete surgical staging, most of our patients had the first-stage disease and patients with stage II and stage III disease had lower disease-free survival and overall survival. This highlights the importance of early complete surgical staging in the adequate and appropriate management of endometrial cancer, especially in early-stage endometrial cancer for better outcomes for such patients. Grade I tumors were present in 40% (n=24) of the specimens, grade II in 45% (n=27), and grade III in 15% (n=9). At the time of presentation, 55% (n=33) had <50% myometrial involvement and 66.7% with no lympho-vascular invasion.

Treatment approaches

Surgery

In evaluating treatment strategies for endometrial cancer, surgical intervention plays a pivotal role, with careful staging guiding decisions on postoperative therapies such as chemotherapy or radiation. In this study involving 60 patients, diverse surgical approaches were employed for 56 of them, including total extra fascial hysterectomy with bilateral salpingo-oophorectomy (TH/BSO) in 45%,

radical hysterectomy with additional lymphadenectomy (pelvic/para-aortic), and cytoreductive surgery when indicated. These procedures aim to achieve optimal resection and are integral to managing the disease effectively.

The standard procedure according to the literature involves a total extra fascial hysterectomy, along with bilateral salpingo-oophorectomy (BSO). This can be performed through minimally invasive or open surgical approaches. Lymph node assessment is recommended, with removal of any suspicious lymph nodes. Extrauterine disease should be biopsied and removed when possible. While peritoneal cytology is discretionary, omentectomy is often performed for certain histologies like clear cell, serous, and carcinosarcoma due to their increased risk of advanced-stage disease.[15]

Oophorectomy is typically included to identify micrometastases and reduce circulating estrogen, which could promote the proliferation of metastatic cells.[16] However, ovarian preservation has not shown to worsen overall survival in young women with low-grade, early-stage endometrioid endometrial cancer, and may even improve survival and reduce cardiovascular risks.[17]

In select young patients without Lynch syndrome, ovarian preservation can mitigate the adverse effects of BSO and allow for fertility options. Conservative therapy with progestin may be suitable for patients with minimal, low-grade disease desiring fertility preservation or for those with comorbidities making surgery too risky. Studies have shown a significant response to progestin therapy, with notable rates of complete response and successful pregnancies.[17]

Historically, complete pelvic and para-aortic lymphadenectomy has been part of surgical staging. The National Comprehensive Cancer Network (NCCN) recommends lymph node assessment for uterine-confined disease, which includes evaluating nodal basins draining the uterus.[18] The extent of lymphadenectomy varies by guidelines, with some recommending it for higher-risk or nonendometrioid histologies.

The gynecologic oncology group (GOG) provides detailed guidelines for staging lymphadenectomy, emphasizing thorough removal of nodal tissue and marking unresectable nodes for potential radiation therapy planning.

Lymphadenectomy has been a key component in the management of endometrial cancer since the 1987 GOG 33 study, which demonstrated a correlation between lymph node involvement and tumor grade and depth of invasion.[19] Retrospective studies suggested a therapeutic benefit in patients with poorly differentiated endometrial cancer and high risk histologies, removal of >11 pelvic lymph nodes were associated with improved OS and PFS compared with removal of less than 11 pelvic lymph nodes in these cases. However, two large randomized trials (MRC-ASTEC and another trial) did not show a significant survival benefit from lymphadenectomy.[20,21]

The extent of lymphadenectomy varies, with some guidelines recommending it based on intraoperative findings such as tumor grade and depth of invasion. The "Mayo criteria" suggest omitting lymphadenectomy for certain low-risk patients, while recommending it for higher-risk cases. The approach to lymphadenectomy can also depend on the patient's surgical risk factors and the surgeon's discretion. Common criteria for performing lymph node dissection include tumor size greater than 2 cm, high-grade histology, or deep myometrial invasion.[22]

Sentinel lymph node (SLN) evaluation is increasingly used in endometrial cancer treatment. Initially lagging due to challenges in identifying reliable markers and technique controversies, cervical injection has now proven effective for SLN detection.

The SENTI-ENDO study indicated increased adjuvant therapy use but no change in recurrence-free survival with SLN identification.[23] The FIRES trial, evaluating SLN biopsy in clinical stage I patients, showed a 97% accuracy in identifying disease in SLNs, with a 3% false-negative rate.[24] This trial demonstrated that SLNs often contain the most distal metastatic disease and that SLN evaluation can detect isolated metastases in regions outside standard dissection fields, suggesting a potential therapeutic benefit. However, its appropriateness for high-risk histologies remains uncertain.

Surgery when cervical involvement is present: radical hysterectomy

For endometrial cancer with cervical involvement, the traditional approach has been radical hysterectomy, based on the assumption that the spread pattern resembles primary cervical cancer.[25] However, cervical involvement does not always indicate parametrial involvement; lymphovascular space invasion (LVSI) might be a stronger predictor. Retrospective studies suggest some survival benefit with radical hysterectomy, but pooled analyses indicate that the hysterectomy type does not independently affect recurrence or survival.[26]

Given the higher surgical risk for patients with diabetes and obesity, the risks of radical surgery must be weighed. Postoperative radiation therapy (RT) has been shown to be an independent predictor of recurrence and survival, especially in stage II endometrial cancer, where it improves survival more than radical hysterectomy. Therefore, many advocate for a simple hysterectomy followed by RT to minimize locoregional recurrence. Radical hysterectomy should be considered if the tumor is bulky and a simple hysterectomy would leave residual tumor. Preoperative RT is also an option in such cases.[26,27]

Cytoreduction surgery for advanced or recurrent endometrial cancer

For patients with advanced-stage endometrial cancer (10-15% of cases), the prognosis is poor, and treatment often follows protocols used for ovarian cancer. Cytoreduction surgery aims to reduce tumor size to less than 2 cm, correlating with improved survival, especially when no visible disease remains. A recent meta-analysis found that a 10% increase in complete cytoreduction was associated with a 9.3-month improvement in overall survival. Therefore, the goal is to achieve no gross residual disease whenever possible.[28]

For patients unsuitable for optimal cytoreduction, neoadjuvant chemotherapy can be an alternative before interval surgery.[29] This approach, particularly beneficial for serous histology, has shown to reduce operative time and hospital stay without negatively affecting overall survival.[30]

Adjuvant therapy

Adjuvant treatment strategies in endometrial cancer include external beam pelvic radiotherapy, vaginal brachytherapy, chemotherapy, and combined chemoradiotherapy; they have been evaluated in several randomized trials. These adjuvant treatments are currently selected based on clinico-pathological risk factors.

For low-risk disease, surgery alone is typically sufficient. In cases of high-intermediate risk endometrial cancer, adjuvant vaginal brachytherapy is recommended to enhance local control with minimal side effects and no significant impact on quality of life.[31,32] For high-risk endometrial cancer, recent large randomized trials support the use of pelvic radiotherapy, particularly in stage I-II endometrial cancer with risk factors.[33] Women with serous cancers and stage III disease have shown improved recurrence-free and overall survival with chemoradiation.[34] The GOG-258 trial demonstrated comparable recurrence-free survival between six cycles of chemotherapy alone and combined chemoradiotherapy, with the latter offering better pelvic and para-aortic nodal control and less toxicity frequently seen in chemotherapy alone (especially hematological, joint, and muscle-related symptoms and sensory neuropathy).[35]

In our series, 76.7% patients (n=46) required adjuvant therapy, of which 24 (40%) undergone external beam radiotherapy, 3.3% received both EBRT and VBT, 12 other patients (20%) with chemotherapy alone, 7 cases (11.7%) received both chemotherapy and radiotherapy, and 1 (1.6%) with hormonal therapy.

In our setting, chemotherapy was administered either as part of the management for non-surgical stages (FIGO stage IVB) or in relation to the histological type of the tumor, specifically in cases of clear cell adenocarcinoma and carcinosarcoma, which are formal indications for chemotherapy. The protocol used was carboplatin-paclitaxel, following this regimen: on day 1, paclitaxel 175 mg/m² was given over 3 hours, followed by carboplatin dosed to an area under the curve (AUC) of 6.0. Both regimens were repeated every 21 days for up to seven cycles, unless disease progression or adverse effects necessitated discontinuation.

Recent molecular studies, notably from The Cancer Genome Atlas (TCGA) project, have identified four distinct molecular classes of endometrial cancer: POLE ultra-mutated, microsatellite instable hypermutated, copy-number-low, and copy-number-high.[36] Subsequent research using surrogate markers to identify these TCGA sub-classes revealed that these molecular sub-types are present across all stages, histological types, and grades of endometrial cancer. Importantly, these molecular classifications have shown a stronger prognostic impact than traditional histo-pathological characteristics. This shift introduces a new era of molecular-based diagnostics and treatment approaches. Integrating molecular factors and new therapeutic targets into adjuvant treatment plans is the focus of ongoing and future trials.

Evolution: pattern of recurrence

Comparing our results with those of Vizza et al and Bendifallah et al reveal consistent trends in recurrence rates and survival outcomes across different risk categories.[37,38] Our data shows higher recurrence rates in higher-risk groups, with the high-risk (HR) group exhibiting a 50% recurrence rate, slightly higher than Vizza's 40.3%. The low-risk (LR) group in our data has a recurrence rate of 16.7%, compared to Vizza's 9.6%, while the intermediate-risk (IR) group shows 25% versus 16.7%, and the high-intermediate risk (I-HR) group has 37.5% compared to 17.1%. Both our data and Bendifallah et al findings indicate that distant recurrences are more common, particularly in high-risk groups.[38] Vizza's data highlights significant differences in 5-year survival rates, with distant-free survival rates of LR 99%, IR 94%, I-HR 86%, HR 88%, and local-free survival rates of LR 99%, IR 100%, I-HR 98%, HR 95%.[37] Our data similarly shows worse outcomes and shorter times to recurrence in higher-risk patients. Vizza's finding that adjuvant therapy significantly reduces recurrence rates in the LR group aligns with the relatively better outcomes for low-risk patients in our dataset.[37] Overall, the comparison underscores the correlation between increasing risk levels and poorer prognosis, with higher recurrence rates, more diverse recurrence sites, and lower survival rates in higher-risk groups.

The limitations of this study include its retrospective nature and the fact that it was conducted at a single center, which may introduce potential bias in the patient profile and limit the generalizability of the results to a broader population. Larger trials with a high sample size are needed to accurately assess the therapeutic benefit. We plan to conduct a larger population-based cohort study in

the future, which will include fully staged patients for both low and high-grade endometrial cancer. This forthcoming study will incorporate new variables, such as isolated tumor cells (ITC) and molecular biomarkers, to enhance our understanding of findings and treatment outcomes, which is essential for developing personalized treatment protocols.

CONCLUSION

This clinico-epidemiological cohort study of endometrial carcinoma in Moroccan women, particularly in the eastern region, provides significant insights into the demographic, clinical, and pathological characteristics of the patient cohort. The findings highlight the disease's prevalence among postmenopausal women, with a predominant occurrence of early-stage endometrioid carcinoma. The study underscores the importance of early diagnosis, as evidenced by the common presentation of postmenopausal bleeding as a primary symptom. Patients with higher-risk profiles exhibited higher recurrence rates and poorer prognoses, emphasizing the need for tailored treatment approaches. Limitations, including the study's retrospective nature and single-center design, call for future multicenter trials to validate these findings across diverse populations. Incorporating new variables like isolated tumor cells and molecular biomarkers in future studies promises to refine treatment strategies and improve outcomes for individuals affected by endometrial carcinoma.

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