

Research Article

Clinico-Demographic Profile and Radiation Treatment Patterns in Carcinoma Endometrium: A Single-Institution Experience

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Abstract

Background: Carcinoma endometrial is among the most prevalent gynecologic cancers globally, with an increasing incidence in poorer nations. Adjuvant radiation therapy is essential in minimizing locoregional recurrence among specific risk categories.

Objectives: To examine the clinical and demographic characteristics, pathological aspects, radiation treatment modalities, toxicity, and results of patients with endometrial cancer receiving treatment in a tertiary care facility.

Materials and Methods:

This retrospective observational analysis encompassed 146 patients with histologically confirmed endometrial cancer treated from 2018 to 2022. We looked at demographic characteristics, clinical presentation, surgical details, histology, stage, patterns of adjuvant treatment (EBRT, brachytherapy, chemotherapy, hormonal therapy), toxicity, recurrence, and survival status.

Results: The median age was in the sixth decade, and most of the participants were post-menopausal women who had unusual vaginal bleeding. The most common histological subtype was endometrioid adenocarcinoma. Most of the

patients who had surgery received adjuvant radiation therapy, and vault brachytherapy was the most common type employed. Most of the treatment-related side effects were grade I or II and could be handled. At the last follow-up, most of the patients had no disease.
Conclusion: Carcinoma endometrial primarily impacts post-menopausal women and yields positive results when addressed with risk-adapted multimodality therapy. Radiation therapy, especially vaginal vault brachytherapy, continues to be a crucial element of adjuvant treatment.

Keywords: Endometrial carcinoma, radiation therapy, brachytherapy, clinico-demographic profile, retrospective study

Introduction

Endometrial carcinoma is the second most prevalent gynecologic cancer globally, succeeding cervical carcinoma, and constitutes a considerable health challenge for post-menopausal women. According to global cancer statistics, the lifetime chance of having endometrial cancer is about 2.8%. Almost 90% of cases show irregular bleeding from the uterus, which makes it easier to diagnose early [1]. Endometrial carcinoma has conventionally been categorized as Type I (estrogen-dependent, endometrioid histology, favorable prognosis) and

Type II (non-estrogen dependent, serous or clear cell histology, aggressive behavior) cancers [2]. Improvements in molecular categorization have made risk stratification even better, although most hospitals still use clinicopathological variables to guide routine care.

Surgery is still the most important part of treatment. It usually involves a total abdominal hysterectomy with bilateral salpingo-oophorectomy (TAH-BSO), with or without lymphadenectomy. Decisions for adjuvant therapy rely on the stage of the surgery, the grade of the cancer, whether it has spread to the lymph nodes, the type of cancer, and the patient's own health. Radiation therapy, encompassing external beam radiation therapy (EBRT), vaginal vault brachytherapy (VBT), or a combination thereof, is important in diminishing locoregional recurrence in intermediate- and high-risk patients [3,4].

This study provides a singular institutional experience concentrating on the clinico-demographic characteristics and radiation treatment modalities in endometrial carcinoma.

Materials and Methods

Study Design and Setting

A retrospective observational study executed at a tertiary care oncology facility.

The study period ran from January 2018 to December 2022.

Table 1. Age Distribution (n = 146)

Age Group (Years)	Number (%)
<40	6 (4.1)
40–49	18 (12.3)
50–59	52 (35.6)
60–69	48 (32.9)
≥70	22 (15.1)

Group of People Who Will Be Studied

We included 146 consecutive patients who had endometrial cancer confirmed by histology.

Inclusion Criteria

- Histologically confirmed carcinoma endometrial
- Patients undergoing treatment with curative purpose
- Availability of comprehensive medical records

Exclusion Criteria:

- Incomplete treatment data
- Loss to follow-up immediately after diagnosis

Data collection

We got information from institutional medical records and radiation oncology databases. This included:

- Demographic information (age, district, BMI, menopausal status)
- Clinical presentation
- Surgical details
- Histopathological features
- FIGO stage • Adjuvant treatment details
- Toxicity (RTOG criteria)
- Recurrence and survival status

Statistical Analysis

We used descriptive statistics. We showed categorical variables as percentages and frequencies.

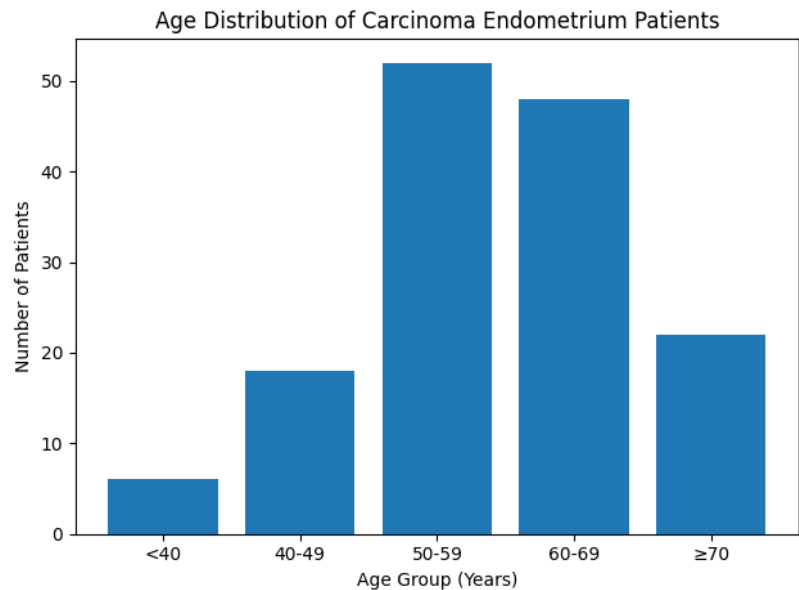
Results

Clinico-Demographic Characteristics

Table 2. Menopausal Status

Status	Number (%)
Post-menopausal	128 (87.7)
Pre-menopausal	18 (12.3)

Figure 1. Age Distribution of Patients



Clinical Presentation

Table 3. Presenting Symptoms

Symptom	Number (%)
Vaginal bleeding	132 (90.4)
Pelvic/abdominal pain	22 (15.1)
Abdominal distension	14 (9.6)
Urinary/rectal complaints	6 (4.1)

Surgical Treatment

Out of 146 patients, **136 (93.15%)** underwent surgery.

Among the **10 non-operated patients**, **8 had metastatic disease at presentation** and **2 were medically inoperable**.

Table 4. Type of Surgery (n = 136)

Surgery Type	Number (%)
TAH + BSO	38 (27.9)
TAH + BSO + Pelvic Lymphadenectomy	62 (45.6)
TAH + BSO + Pelvic & Para-aortic LND	36 (26.5)

Histopathological Features

Table 5. Histological Subtypes

Histology	Number (%)
Endometrioid adenocarcinoma	112 (76.7)
Serous carcinoma	18 (12.3)
Clear cell carcinoma	6 (4.1)
Others	10 (6.9)

Table 6. Tumor Grade

Grade	Number (%)
I	54 (37.0)
II	58 (39.7)
III	34 (23.3)

Stage Distribution

Table 7. FIGO Stage

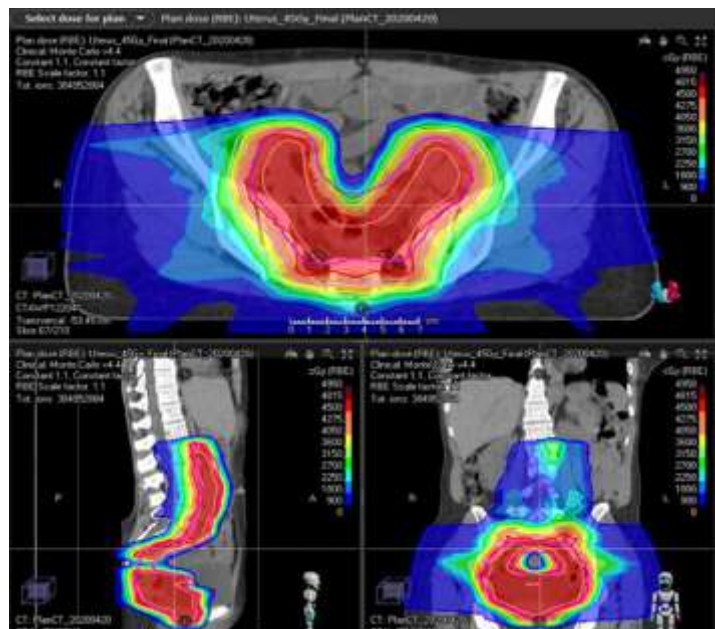
Stage	Number (%)
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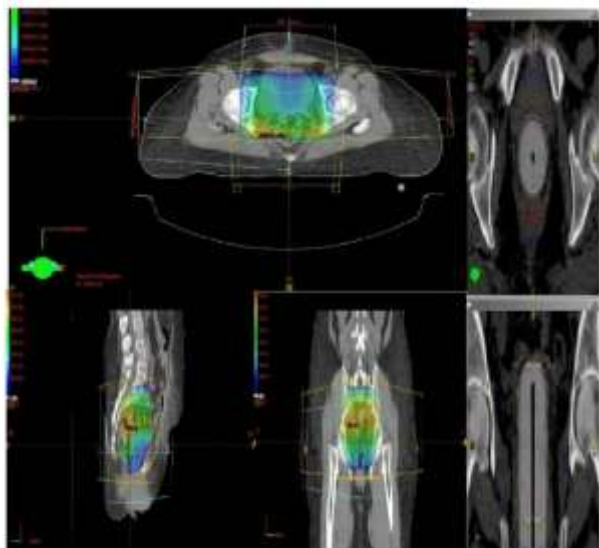
I	96 (65.8)
II	18 (12.3)
III	24 (16.4)
IV	8 (5.5)

Adjuvant Treatment Patterns

Table 8. Adjuvant Radiation Therapy (n = 136)

Modality	Number (%)
Vault Brachytherapy alone	52 (38.2)
EBRT alone	18 (13.2)
EBRT + Brachytherapy	46 (33.8)
No Radiation	20 (14.8)





Chemotherapy and Hormonal Therapy

- Chemotherapy was administered in **high-risk and advanced-stage patients**
- Hormonal therapy was used in selected low-grade, hormone-receptor-positive cases

Toxicity Profile

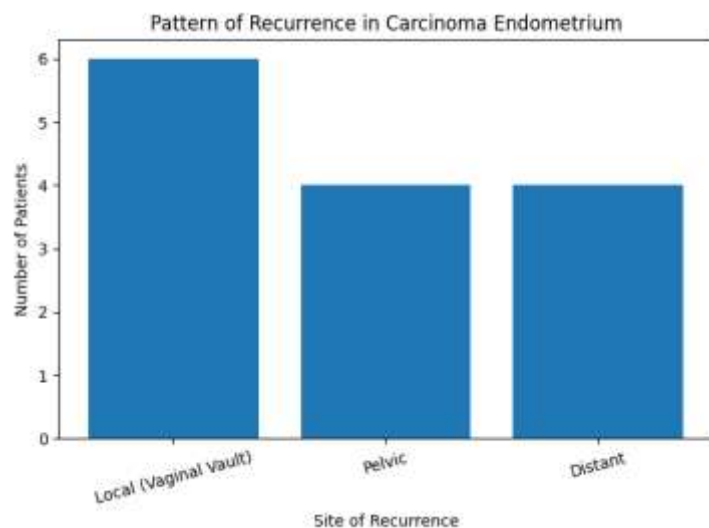
Table 9. Radiation-Related Toxicity

Toxicity	Grade I–II (%)	Grade III (%)
Gastrointestinal	28 (19.2)	4 (2.7)
Genitourinary	22 (15.1)	2 (1.4)
Vaginal stenosis	18 (12.3)	0

Recurrence and Outcomes

- Recurrence noted in **14 patients (10.3%)**
- Median time to recurrence: **10 months (range 10–60 months)**
- Majority of recurrences were locoregional

Figure 2. Pattern of Recurrence



Discussion

The current study corroborates that endometrial cancer mostly impacts post-menopausal women, with abnormal vaginal bleeding as the most prevalent presenting symptom, in alignment with existing literature [4,5]. Endometrioid adenocarcinoma continued to be the most prevalent histological subtype, indicating the prevalence of Type I malignancies.

Our facility efficiently employed risk-adapted adjuvant radiation therapy. Vault brachytherapy alone was enough for patients classified as low- and intermediate-risk, whereas a combination of external beam radiation therapy (EBRT) and brachytherapy was designated for those exhibiting high-risk characteristics, including deep myometrial invasion, high grade, and lymphovascular invasion. This method is in conformity with the ESMO-ESGO-ESTRO recommendations [6-9].

Radiation-related toxicities were tolerable and primarily of low grade, underscoring the safety of contemporary treatments such as IMRT and HDR brachytherapy.

Conclusion

Carcinoma endometrial primarily affects post-menopausal women and has a favorable prognosis when found early. A customized, risk-oriented strategy for adjuvant radiation therapy enhances local control while reducing toxicity. Vaginal vault brachytherapy remains a fundamental component of adjuvant therapy.

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