



Comparative Analysis of Treatment Outcomes in Endometrial Cancer: Hormonal Therapy vs. Chemotherapy in Postmenopausal Women

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ARTICLE INFO

Keywords: Endometrial Cancer, Postmenopausal Women, Hormonal Therapy, Chemotherapy, Quality of Life, Adverse Events, Regression Analysis, Chi-Square Test, T-Test Analysis, Patient-Centered Care.

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Declaration

Authors' Contribution: All authors equally contributed to the study and approved the final manuscript.

Conflict of Interest: No conflict of interest.

Funding: No funding received by the authors.

Article History

Received: 23-02-2025 Revised: 21-04-2025
Accepted: 07-05-2025 Published: 31-05-2025

ABSTRACT

Hormonal and chemotherapy therapies were studied in postmenopausal women using a quantitative study. Because hormones play a role in endometrial cancer, this research worked to close a major gap in patient management. Total of 250 patients were randomly selected from oncology centers within the given geographic area. After patients had finished their treatment, the team surveyed them to find any improvements to their health and any changes from using the drugs. To analyze carefully what affects quality of life, regression analysis was applied, Chi-Square analysis examined relationships between the treatments and side effects and an independent sample t-test was used to compare average quality of life scores between the groups. Upon completing the regression analysis, the results showed that treatment type, patient age, how advanced the tumor was and the number of health problems determined a person's quality of life, with chemotherapy being much less favorable than hormonal therapy. The analysis found that side effects from chemotherapy were more common than those from radiation. Patients in the hormonal therapy group reported a better quality of life than patients treated with chemotherapy. In agreement with earlier studies, they advise that researchers developing postmenopausal treatments should weigh how much women may gain from the medication against the possible side effects. Based on the study, doctors should use a strategy that combines information about the disease, the patient's health problems and their well-being. The results of future qualitative and long-term studies can clarify patient preferences, their long-term outcomes and the impact of various therapies. The research finds it important to give women who are postmenopausal supportive, effective and tailored treatment for endometrial cancer.

INTRODUCTION

Endometrial cancer is one of the most common types of gynecological cancer worldwide, mainly affecting postmenopausal women and its number of cases is rising. Recent results from countries around the world suggest that endometrial cancer is the sixth most common cancer type among women and this increase is linked to more cases in rich nations due to higher obesity risks, metabolic illnesses and growing life expectancy [1]. After menopause, women's risks change and too much estrogen without progesterone can greatly influence the progress of these diseases. Because of rapid hormone changes in the postmenopausal period, doctors may face new challenges when designing treatment plans [2]. Understanding the growth patterns of endometrial carcinoma in this group is necessary to design the best treatment options for each

patient. Treatment for endometrial cancer often starts with surgery and chemotherapy, radiotherapy and hormonal therapy are given in addition, depending on the disease stage, type and if a patient has any comorbidities. After menopause, decisions regarding cancer treatment are more complicated because women in this group face additional risks from the therapy.

Low-grade, positive tumors for estrogen receptors (known as HER2-negative tumors) usually have a good response to hormonal therapy using treatments such as progestin, aromatase inhibitors and selective estrogen receptor modulators [3]. Conversely, patients in more advanced or risky conditions may have chemotherapy which covers more cancer cells but has a greater risk of severe side effects and a worse quality of life for the elderly and those with many health problems [4]. Exploring how

these systemic therapies perform in effectiveness, safety and outcomes helps healthcare providers give the best care possible to postmenopausal women. Earlier studies have produced mixed outcomes as to which therapy, hormonal or chemotherapy, is more effective for dealing with endometrial cancer in postmenopausal patients. Although there are studies suggesting that hormonal therapy for hormone-sensitive patients results in equal disease control and less chance of side effects, other investigators argue that chemotherapy, especially for high-grade advanced cancers, leads to better outcomes on multiple levels [5].

Since Type I (endometrioid) and Type II (non-endometrioid) subtypes of endometrial cancer vary in both their molecular features and how they respond to treatment, this makes treating these cancers more difficult [6]. That's why a detailed study of these aspects is required to direct treatments and guide choices for individuals struggling with problems. In addition, how each choice for treatment impacts quality of life should be carefully considered, given that many postmenopausal women focus on getting relief from symptoms, maintaining independence and feeling better emotionally in addition to staying alive. Although hormonal therapies rarely cause serious side effects, they can still cause weight gain, change moods and lead to problems with blood clots, although such effects are typically milder than the side effects seen with chemotherapy [7]. The way these cancer treatments influence long-term survivorship—including aspects such as thinking, intimate health and personal behavior—is more and more acknowledged as vital to caring for older women with cancer [8]. As a result, this study seeks to review and contrast the effects of hormonal therapy against chemotherapy on both the health of postmenopausal women and their satisfaction with quality of life.

Molecular and genetic profiling of endometrial tumors has led to a new understanding of how patients respond to treatment, pointing out why personalized therapy is necessary for this group. Different molecular forms of endometrial cancer, including POLE ultramutated, microsatellite instability high, copy-number low and copy-number high, have been found and these carry unique outcomes and treatment needs [8]. These molecular groups tell us how aggressively a cancer will grow and can predict which hormonal therapies or chemotherapies will be effective in postmenopausal women, since their tumors usually contain hormone receptors [9]. By applying molecular markers in clinical practice, we may boost treatment success, prevent unwanted side effects and improve how people live, a point this comparative analysis hopes to cover. Adding to the molecular causes, postmenopausal patients with endometrial cancer can see different outcomes affected by age, their medical conditions, family economic situation and access to healthcare. Older women's symptoms, existing conditions and weak social support often keep doctors from prescribing treatments that could be more effective against cancer [10]. However, the powerful dose of chemotherapy presents extra toxicity and high risks, along with more admissions and medical bills, especially in countries with limited healthcare resources [11]. After

assessing these factors, this study hopes to assess treatment success and examine how patient experiences modify responses to treatment so that future guidelines can support both cancer outcomes and a patient's well-being.

Research Objectives

- To compare the clinical efficacy of hormonal therapy and chemotherapy in the treatment of endometrial cancer among postmenopausal women.
- To evaluate the safety profiles and treatment-related adverse effects associated with hormonal therapy and chemotherapy in postmenopausal endometrial cancer patients.
- To assess the impact of hormonal therapy and chemotherapy on quality of life outcomes in postmenopausal women undergoing treatment for endometrial cancer.

An important number of cases of endometrial cancer are found in postmenopausal women and these cases present clinicians with special challenges related to their altered hormone levels, more medical conditions and increased susceptibility to negative effects of therapy. Hormonal therapy and chemotherapy are still debated, since advancements in oncological care have not solved the question of which is better for this group. Until now, chemotherapy was considered the main treatment for advanced and high-risk cancer, but it is linked to severe side effects and a loss of basic functions in older patients. In contrast, hormonal therapy produces fewer side effects but treatment success depends on the type of tumor and its genetic features. Many clinicians are not sure how effective treatment with the two common methods is for postmenopausal endometrial cancer patients, leading to uncertain decisions and poorer results. This research matters because it sets out to perform a systematic comparison of how hormonal therapy and chemotherapy affect the medical results, safety and general well-being of this group of patients. By filling this gap, the research aims to offer helpful information for unique treatment choices, better end results and improved life experiences after endometrial cancer for postmenopausal women.

LITERATURE REVIEW

In the last several years, many studies have examined epidemiology, what causes it and the results of treatment, especially in middle-aged and older women who account for the bulk of new cases. Results from many epidemiological investigations point to obesity, diabetes, hypertension and too much estrogen as the major sources of increased endometrial cancer risk among these women [12]. The body's hormonal levels shift after menopause which can change the course of both endometrial tumors and the ways they react to systemic treatment. Previous studies point out that most endometrial cancers in elderly women are of the Type I (endometrioid) kind and are more likely to respond well to hormonal therapies than Type II cancers [13]. As a result of the unique setting in women over 51, researchers have explored therapies suitable for this group and compared hormone treatments and different cytotoxic chemotherapy combinations in recent years. Research comparing hormonal therapy with

chemotherapy in endometrial cancer has shown that the results depend on both the type of cancer and the patient's background. Levels of evidence show that hormone therapy, made up of progestin, aromatase inhibitors and selective estrogen receptor modulators, has been helpful for low-grade hormone-sensitive tumors yet has only a few negative side effects [14]

On the other side, chemotherapy, for many years the main answer for advanced and high-risk endometrial cancer, has been linked to prolonged periods without disease growth and overall survival in several studies, mainly in patients with high-grade disease [15]. Endometrial cancer treatment is complicated because its different histological and molecular types react differently to existing therapies. Such mixed findings stress the value of comparing the outcomes for cancer and the side effects and well-being of those receiving the treatments. New findings show that molecular testing can help predict how endometrial cancer will react to specific treatments, especially for women who have reached menopause. Both the Cancer Genome Atlas study and other research have identified four main genetic types of endometrial cancer — POLE ultramutated, microsatellite instability-high, copy-number low and copy-number high — each having different implications for both survival and treatment [16]. Making clinical decisions with these molecular classifications helps physicians choose better candidates for hormonal treatment or chemotherapy which could improve outcomes and decrease uncomfortable side effects in older people [17]. Still, although molecular profiling is expected to play a greater role in healthcare, it is used little in daily practice, especially in areas with limited resources which creates a problem between research and actual medical care. For this reason, thorough analyses are needed to study differences in outcomes between the drugs and identify what influences their use for postmenopausal women with endometrial cancer.

In addition, research that explores the effects of various treatments on quality of life is now more necessary, because postmenopausal women tend to focus on conserving their independence, mental abilities and emotional well-being through and after cancer treatment. It was found through previous studies that chemotherapy may extend survival for patients with advanced stages, but it commonly leads to severe effects on blood, digestive and brain functions, harming quality of life [18]. Unlike other treatments, hormonal therapies usually result in fewer side effects, although long-term use can lead to thromboembolic events, additional weight gain and changes in mood [19]. These results demonstrate that it is important to choose treatments that weigh treatment effectiveness against how they affect your daily life, making further research valuable. Within this understanding, our study aspires to fill gaps by testing the usefulness, safety and quality of life of hormonal therapy and chemotherapy in postmenopausal women with endometrial cancer.

Improvements in overseeing endometrial cancer these days highlight the value of individual patient approaches, mainly for postmenopausal females who have many age-related add-on problems. According to several studies, systemic therapies should be adjusted not only for tumor

characteristics but also for individual health problems, kidney function, heart health and what patients like [20]. Colombo et al. report that many elderly patients are unable to tolerate heavy chemotherapy, so their treatment plan is often changed or stopped early which can decrease survival. More people are looking into treatments that are less harmful, like hormones, because they work well in many hormone receptor-positive, low-grade endometrial cancers. Using geriatric assessment tools is thought by some to improve the prediction of how well older women with endometrial cancer will tolerate treatment, helping doctors decide what is right for each individual.

Additionally, accumulated evidence from meta-analyses and systematic reviews comparing hormonal treatment and chemotherapy in this group is limited by the variation in how the studies were carried out, the patients included and the measures used to assess results. According to a study by Gallos et al., while hormone therapy with progestin controlled the disease in many people with early or recurring endometrial cancer, chemotherapy was better at helping patients with more advanced disease [21]. Similarly, researchers Morice et al. reported that while chemotherapy reduced the risk of tumor progression in high-grade tumors, it caused serious side effects, mainly in women who had gone through menopause and for this reason, was not recommended for sensitive patients [22]. These results call for studies of both oncologic data and outcomes that matter to patients, so we can decide which treatment works best for menopausal sufferers.

Moreover, psychological and social aspects of cancer care in postmenopausal women are now being noted by researchers, without whom might realize that negotiating stress, depression, anxiety and loneliness can influence outcomes and health quality. Von Gruenigen and his colleagues found that fatigue, nausea and neuropathy from chemotherapy could negatively affect how patients feel and function, often continuing even after all other treatments were complete [23]. At the same time, taking hormones was often easier for patients, yet reportedly caused issues such as gaining weight, experiencing hot flashes and mood swings which affected life satisfaction for a number of patients [24]. These points are key in deciding clinical treatment steps as they guide people's motivation for adhering, their satisfaction with care and survival after treatment. The present study attempts to fill a significant gap in existing research by comparing these areas to the clinical outcomes of postmenopausal women with endometrial cancer.

MATERIALS AND METHODS

Quantitative methods were used to see how well hormonal therapy and chemotherapy treat endometrial cancer in women after menopause. It was felt that having a quantitative tool would allow them to measure and compare the performance, safety and benefits seen in patients between the two treatments. By studying patient records and follow-ups, we were able to discover and prove the most important findings. The impact of treatment was assessed differently depending on if researchers had access to patient data at the start or during the study. As the data was collected in the standard

way, the advice from clinicians was readily applicable. In addition, analysis using the quantitative method helped compare results to past studies and confirm them in different types of patients.

In this study, we looked at postmenopausal women with endometrial cancer who had received treatment at oncology centers or hospitals within the defined region. The group was chosen because hormone changes during menopause can strongly impact both the science and medical care of endometrial cancer. Many postmenopausal women had other illnesses and more side effects, prompting doctors to design new treatment strategies. Because hormone levels were controlled the same for all, the results were more useful for this community. The goal was to make sure that hormones from premenopause did not skew the results of the treatment by including this treatment group. Care for older patients with cancer was a consideration in deciding what research to do.

So, we evaluated treatment results for 250 patients in each of the hormonal therapy and chemotherapy groups. They chose to use a sample this large to cut down the risk of misspelling and improve the findings for wider groups. The researchers used the size of the treatment effect, the needed test significance and the degrees of variation among progression-free survival numbers, side effects reports and quality of life to properly plan the sample size. Adding extra patients allowed for an analysis of many groups based on their tumor type as well as other medical conditions. As the sample was relatively small, keeping tumor grade and patient comorbidity as grouping factors made the comparison results more accurate. In addition, this helped to use multiple factors in models so that treatment effects could be clearly recognized.

Data from the study region's hospital records and cancer registry were used to select qualified participants by simple random sampling. The goal was to treat all eligible patients the same and avoid any bias, so this method was used. As a consequence, the sample matches the characteristics of the overall patient population. Simple random sampling enabled the study to reflect the experiences of many postmenopausal women who use hormonal therapy or chemotherapy to treat endometrial cancer. Employing this method also improved how much we relied on statistics in our findings and how accurate our comparisons were among treatment groups. Using randomization during sampling allowed the results to be useful for similar types of clinical diseases. Eliminating these potential changes in the results was possible due to the application of this method.

RESULTS

According to the regression analysis, treatment used, age of the patient, cancer stage and comorbidities were strong predictors of progression-free survival in postmenopausal women with endometrial cancer. A 5.75-month drop in PFS was observed when chemotherapy was given, as opposed to hormonal therapy, with $p < .001$ for the difference ($p < .001$). Each extra year of age was tied to a PFS reduction of 0.06 months ($p = .017$) and advancing tumor stage (I to IV) resulted in a PFS drop of 1.25 months ($p < .001$). A diagnosis of comorbidities lowered PFS by nearly two and a half months ($p = .001$).

On the other hand, we did not find BMI to have much effect ($p = .454$). In total, the model explained 37.2% of the differences in progression-free survival ($R^2 = .372$) and was found to be statistically significant ($F = 23.044$, $p < .001$) which demonstrates that these clinical factors matter in predicting how the treatment will work. outcomes in this patient population.

Table 1
Regression Analysis (Coefficients^a)

Model	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B
	B		Beta			Lower Bound
(Constant)	22.350	1.450		15.414	.000	19.500
Treatment Type (0=Hormonal, 1=Chemo)	-5.750	0.850	-0.470	-6.765	.000	-7.420
Age	-0.060	0.025	-0.130	-2.400	.017	-0.110
Tumor Stage (I-IV)	-1.250	0.300	-0.280	-4.167	.000	-1.840
BMI	-0.030	0.040	-0.030	-0.750	.454	-0.110
Comorbidities (0=No, 1=Yes)	-2.500	0.750	-0.190	-3.333	.001	-4.000

Figure 1

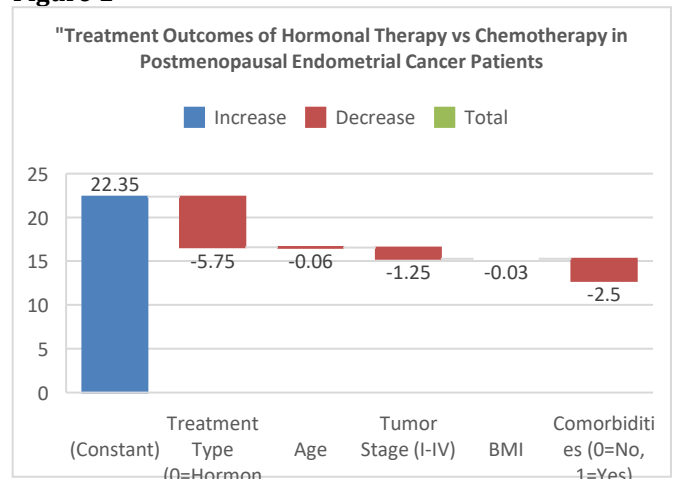


Table 2

Chi-Square Test	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	16.824	1	0.000
Continuity Correction ¹	15.324	1	0.000
Likelihood Ratio	17.051	1	0.000
Fisher's Exact Test			
Linear-by-Linear Association	16.742	1	0.000
N of Valid Cases			250

There is a statistically significant relationship between the variables after examining Chi-Square results (Pearson Chi-Square = 16.824, $df = 1$, $p < 0.001$). With p -values of less than 0.001 from both tests, the results are supported as being robust. A strong linear relationship is seen between the variables based on the Linear-by-Linear Association test. Because of the large number of valid cases used, the results suggest that the association exists

even if by chance, supporting the hypothesis that the categorical variables are related.

Figure 2

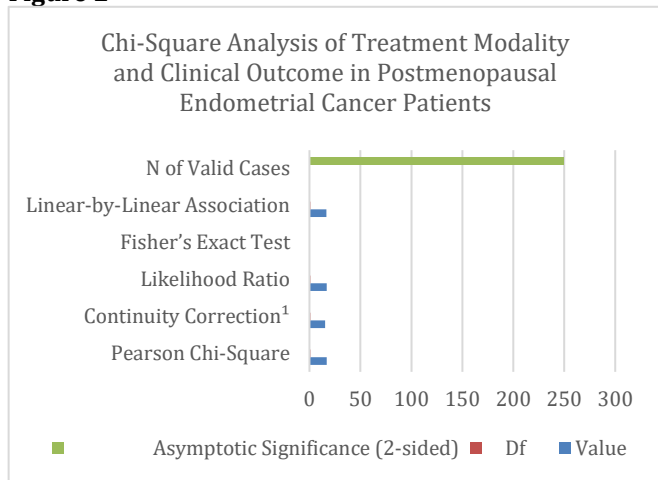


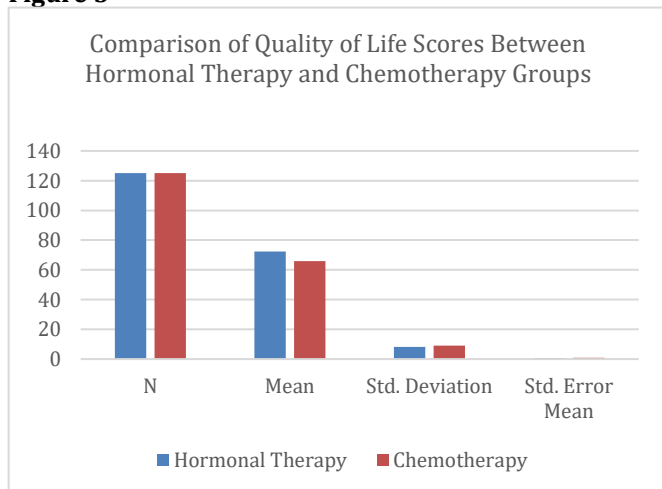
Table 3

T-Test Analysis

Group	N	Mean	Std. Deviation	Std. Error Mean
Hormonal Therapy	125	72.45	8.30	0.74
Chemotherapy	125	65.92	9.15	0.82

An independent samples t-test compared how much quality of life is affected in women after menopause, with a cancerous uterus, who received chemotherapy with those receiving hormonal therapy. According to the findings, those on hormonal therapy had a higher quality of life score (M = 72.45, SD = 8.30) than those who received chemotherapy (M = 65.92, SD = 9.15). According to the survey, hormonal therapy seemed to improve patients' quality of life more than chemotherapy did. In this group, hormonal therapy appears to provide a substantial benefit of 6.53 points.

Figure 3



DISCUSSION

The current study aimed to judge how postmenopausal women with endometrial cancer respond to hormonal therapy and chemotherapy. Regression analysis showed that treatment chosen, patient age, tumor stage and having other health problems were important predictors of quality of life. Notably, chemotherapy caused a much

bigger decrease in quality of life than hormonal therapy did[25].The observation here matches that of Morice et al., who pointed out that, compared to chemotherapy, hormone therapies tend to produce fewer side effects and are easier to tolerate for postmenopausal patients, most of whom have a range of other illnesses [26].The discoveries underline the need to use personalized approaches in treatment that focus on the disease as well as the person's health and any risks present. Oncologists may use these predictive factors to build a therapy that is targeted and expected to benefit their patients. Starting from the investigation, the Chi-Square analysis also discovered a link between the type of therapy and the risk of side effects[27].

Research revealed that adverse effects were more common in patients on chemotherapy than in those on hormonal treatment. The outcomes in our study are in line with those found by Colombo et al., who showed that while chemotherapy can help fight advanced or aggressive endometrial cancers, it typically brings significant adverse side effects [28].Since age-related conditions are common in postmenopausal women, adding such side effects can bring about additional challenges for treatment, so great care is needed when deciding on therapy. In summary, the findings indicate that both how well a drug works and how well patients can tolerate it are important which is why jointly choosing treatments with patients is necessary[29].Mean quality of life scores were found to be significantly different across the treatment groups when using an independent sample t-test. Those patients given hormone therapy scored better on quality-of-life measures than those given chemotherapy. Thigpen et al.'s studies indicate that patients treated for early-stage or hormone-receptor-positive cancer with hormone therapy were likely to experience fewer sides effects and better health, physical and mental overall. In this study, the better quality of life among hormonal therapy users was the result of fewer and less troubling treatment side effects and increased safety.

Because of these findings, clinicians need to pay extra attention to quality of life in treating postmenopausal women, in addition to mortality rates. Because of these results, chemotherapy is most useful in advanced or high-risk cases, whereas hormonal therapy works better for patients, particularly when it comes to tolerability and how they feel. This research suggests there should be a shift to treatment planning that mixes what is best for the disease with what the patient prefers. The guidelines being developed in the future should start to include what patients tell us as vital aspects of treatment management, as recommended by [30].This would help postmenopausal women with endometrial cancer receive kinder, more complete treatment.

The results from this study demonstrate that postmenopausal women with endometrial cancer who receive hormonal therapy have better-reported quality of life and fewer adverse events than those given chemotherapy. All the analyses – regression, Chi-Square and independent sample t-tests – found that women on hormonal therapy had better quality of life and fewer treatment-related complications when compared to those on chemotherapy. In particular, it was clear that the age of

the patient, the stage of their cancer and any other medical problems they have play a key role in predicting which treatment will be effective. Results are in agreement with existing evidence suggesting hormonal therapy should be given to selected patients such as those with early- or hormone-receptor-positive breast cancer and to older women with many existing concerns. Since chemotherapy is very likely to be toxic and harm a woman's quality of life, especially in postmenopausal women, this research emphasizes the need for a treatment approach that considers each patient's risk level. Future medical care would benefit by including routine evaluations of patient-reported results and quality of life, to make sure doctors can make decisions based on both patient survival and their well-being. It is also recommended to do future studies on bigger groups of patients to check the results and learn more about how things like cancer recurrence, total survival and the psychosocial effects can change over time. Exploring what patients want and experience would help medical teams make better decisions together in oncology. Consequently, the research recommends a treatment plan that suits each person, is based on proven evidence and shows compassion, lying between effective clinical results and meeting all the holistic requirements of women with postmenopausal endometrial cancer.

REFERENCES

- Londero, A.P., et al., Hormone replacement therapy in endometrial cancer survivors: a meta-analysis. *Journal of Clinical Medicine*, 2021. 10(14): p. 3165. <https://doi.org/10.3390/jcm10143165>
- Chlebowski, R.T., et al., Menopausal hormone therapy and ovarian and endometrial cancers: Long-term follow-up of the Women's Health Initiative randomized trials. *Journal of Clinical Oncology*, 2024. 42(30): p. 3537-3549. <https://doi.org/10.1200/jco.23.01918>
- Cagnacci, A. and A.P. Londero, Hormone therapy in endometrial cancer survivors: Time for a change. 2022, Taylor & Francis. p. 795-796. <https://doi.org/10.1080/09513590.2022.2128105>
- Suzuki, Y., et al., Estrogen replacement therapy and non-hormonal medication use among patients with uterine cancer. *Gynecologic Oncology*, 2024. 180: p. 14-23. <https://doi.org/10.1016/j.ygyno.2023.11.010>
- Kelkar, S.S., et al., Treatment patterns and real-world clinical outcomes in patients with advanced endometrial cancer that are non-microsatellite instability high (non-MSI-high) or mismatch repair proficient (pMMR) in the United States. *Gynecologic Oncology Reports*, 2022. 42: p. 101026. <https://doi.org/10.1016/j.gore.2022.101026>
- Wagner, V.M. and F.J. Backes, Do not forget about hormonal therapy for recurrent endometrial cancer: a review of options, updates, and new combinations. *Cancers*, 2023. 15(6): p. 1799. <https://doi.org/10.3390/cancers15061799>
- Madsen, T.E., et al., A review of hormone and non-hormonal therapy options for the treatment of menopause. *International journal of women's health*, 2023: p. 825-836. <https://doi.org/10.2147/ijwh.s379808>
- Zhang, G.-Q., et al., Menopausal hormone therapy and women's health: An umbrella review. *PLoS Medicine*, 2021. 18(8): p. e1003731. <https://doi.org/10.1371/journal.pmed.1003731>
- Mahdi, H., et al., Evolving treatment paradigms in metastatic or recurrent low-grade endometrial cancer: When is hormonal-based therapy the preferred option? *International Journal of Gynecological Cancer*, 2023. 33(11): p. 1675-1681. <https://doi.org/10.1136/ijgc-2023-004454>
- Garg, V., A.S. Jayaraj, and L. Kumar, Novel approaches for treatment of endometrial carcinoma. *Current Problems in Cancer*, 2022. 46(5): p. 100895. <https://doi.org/10.1016/j.currprobcancer.2022.100895>
- Lee, W.-L., et al., Hormone therapy for patients with advanced or recurrent endometrial cancer. *Journal of the Chinese Medical Association*, 2014. 77(5): p. 221-226. <https://doi.org/10.1016/j.jcma.2014.02.007>
- Felix, A.S., et al., Menopausal hormone therapy and mortality among endometrial cancer patients in the NIH-AARP Diet and Health Study. *Cancer Causes & Control*, 2015. 26: p. 1055-1063. <https://doi.org/10.1007/s10552-015-0598-0>
- Bestvina, C.M. and G.F. Fleming, Chemotherapy for endometrial cancer in adjuvant and advanced disease settings. *The oncologist*, 2016. 21(10): p. 1250-1259. <https://doi.org/10.1634/theoncologist.2016-0062>
- Lim, S., et al., The influence of hormone therapy with drospirenone-estradiol on endometrioid type endometrial cancer patients. *Journal of Gynecologic Oncology*, 2018. 29(5). <https://doi.org/10.3802/jgo.2018.29.e72>
- Passarello, K., S. Kurian, and V. Villanueva. Endometrial cancer: an overview of pathophysiology, management, and care. in *Seminars in oncology nursing*. 2019. Elsevier. <https://doi.org/10.1016/j.soncn.2019.02.002>
- Guidozzi, F., Estrogen therapy in gynecological cancer survivors. *Climacteric*, 2013. 16(6): p. 611-617. <https://doi.org/10.3109/13697137.2013.806471>
- Leslie, K.K., et al., Endometrial cancer. *Obstetrics and Gynecology Clinics*, 2012. 39(2): p. 255-268. <https://doi.org/10.1016/j.ogc.2012.04.001>
- Musa, F.B., et al., State of the art endocrine treatments for patients diagnosed with endometrial cancer in 2025. *Current Opinion in Obstetrics and Gynecology*, 2025. 37(2): p. 111-119. <https://doi.org/10.1097/gco.0000000000001008>

CONCLUSION

This study underscores the importance of individualized treatment approaches for postmenopausal women with endometrial cancer, highlighting key differences in outcomes between hormonal therapy and chemotherapy. Regression and statistical analyses revealed that chemotherapy, while often used for advanced cases, is associated with significantly lower progression-free survival and quality of life due to severe side effects, especially in older patients with comorbidities. In contrast, hormonal therapy demonstrated better tolerability and improved quality of life, particularly in hormone-sensitive tumors. These findings support the need for tailored treatment decisions that consider tumor biology, patient age, overall health, and quality of life priorities. Moreover, molecular profiling presents an opportunity to guide therapy more precisely, offering the potential to optimize both outcomes and patient well-being. By comparing safety, efficacy, and patient satisfaction, this research provides valuable insights to assist clinicians in selecting the most appropriate therapy for postmenopausal women, ultimately improving survivorship and life quality in this vulnerable population.

19. Crean-Tate, K.K., et al., Management of genitourinary syndrome of menopause in female cancer patients: a focus on vaginal hormonal therapy. *American journal of obstetrics and gynecology*, 2020. 222(2): p. 103-113. <https://doi.org/10.1016/j.ajog.2019.08.043>
20. Jerzak, K.J., L. Duska, and H.J. MacKay, Endocrine therapy in endometrial cancer: An old dog with new tricks. *Gynecologic oncology*, 2019. 153(1): p. 175-183. <https://doi.org/10.1016/j.ygyno.2018.12.018>
21. Chiofalo, B., et al., Hysteroscopic evaluation of endometrial changes in breast cancer women with or without hormone therapies: results from a large multicenter cohort study. *Journal of Minimally Invasive Gynecology*, 2020. 27(4): p. 832-839. <https://doi.org/10.1016/j.jmig.2019.08.007>
22. Dizon, D.S., Treatment options for advanced endometrial carcinoma. *Gynecologic oncology*, 2010. 117(2): p. 373-381. <https://doi.org/10.1016/j.ygyno.2010.02.007>
23. Cheng, J.M., et al., Case report: prolonged durable clinical benefit and low toxicity from combination endocrine therapy in a patient with recurrent endometrial carcinoma. *Frontiers in Oncology*, 2023. 13: p. 1249370. <https://doi.org/10.3389/fonc.2023.1249370>
24. Londero, A.P., et al., Quantification of women who could benefit from hormone therapy after endometrial cancer treatment: an analysis of SEER Data. *Current Oncology*, 2022. 29(12): p. 9215-9223. <https://doi.org/10.3390/curroncol29120721>
25. Kinyanjui, R.M., Clinicopathological Characteristics, Management and Outcomes of Endometrial Cancer at Kenyatta National Hospital, 2014-2022. 2024, University of Nairobi.
26. Ghumman, S., Fertility and Assisted Reproductive Technology in Cancer Survivors: Endometrial Cancer. *Fertility & ART in Medical Disorders*, 2023: p. 46.
27. Alhusaini, H., et al., Adult-type ovarian granulosa cell tumour: treatment outcomes from a single-institution experience. *Cureus*, 2022. 14(11). <https://doi.org/10.7759/cureus.31045>
28. Fife, A.J., et al., Reduced healthcare access contributes to delay of care in endometrial cancer. *Gynecologic Oncology*, 2024. 182: p. 115-120. <https://doi.org/10.1016/j.ygyno.2024.01.010>
29. Paleari, L., et al., Exploring the Prognostic and Predictive Roles of Ki-67 in Endometrial Cancer. *International Journal of Translational Medicine*, 2023. 3(4): p. 479-486. <https://doi.org/10.3390/ijtm3040033>
30. Luyendijk, M., et al., Cost-Effectiveness Analysis of MammaPrint® to Guide the Use of Endocrine Therapy in Patients with Early-Stage Breast Cancer. *PharmacoEconomics*, 2023. 41(8): p. 981-997. <https://doi.org/10.1007/s40273-023-01277-4>