

Comparison of endometrial cancer in pre, perimenopausal and post-menopausal ages

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ABSTRACT

Gynecology clinics often see endometrial carcinoma. The 6th most prevalent female cancer. Postmenopausal women account for almost 75% of endometrial cancer cases. Asian women have a lifetime risk of uterine cancer of 1 in 224. Reports vary on its prevalence in pre- and perimenopausal women. This study compared endometrial cancer rates in pre-, peri-, and postmenopausal women. Obstetrics & Gynecology Department, MCH Center, Pakistan Institute of Medical Sciences, Islamabad conducted this cross-sectional study. The sample size was estimated at 210 with 16.3% endometrial malignancies, 95% confidence, and 5% alpha. The sample was stratified by age: premenopause (30–40 years) (n=70), perimenopause (41–55 years) (n=70), and post menopause (>55 years). The study took 6 months, January–June 2023. We took written informed consent during enrolling. We enrolled women in these age groups with endometrial carcinoma suspicions. Patients were classified as malignant or not after a thorough diagnosis. In SPSS version 22.0, descriptive and inferential statistics were used to compare baseline characteristics and endometrial cancer by age group. The mean age of responders was 45.9 years, ranging from 31 to 78. We found endometrial cancer in 45 (21.5%) of 210 study cases. This study found cancer rates of 8.0% premenopausal, 15.0% perimenopausal, and 19.0% postmenopausal. This hospital-based study demonstrated endometrial cancer rates vary by age group: pre, peri, and postmenopausal. Diagnostics and treatment should be streamlined by age.

Keywords; Women, menopause, endometrial cancer, pre menopause

INTRODUCTION

Endometrial cancer, which almost exclusively affects women who have gone through menopause, is a major source of concern in gynecological practices today (Gentry-Maharaj & Karpinskyj, 2020). It is impossible to exaggerate how vital it is to have a thorough understanding of the condition's causes, diagnosis, and available treatment options. Its consequences need to be managed and reduced by continued research, more awareness, and more focused efforts in the

healthcare sector (Knez et al., 2021). Endometrial cancer is distinguished from other forms of gynecological cancer due to the fact that it is often diagnosed in women when they have reached a more advanced age. The fact that it is more common in postmenopausal women lends credence to the hypothesis that there is a connection between the hormones associated with menopause and the progression of the disease (Markowska et al., 2022). Endometrial cancer is caused by a combination of factors, including abnormalities in the endocrine system, genetic predispositions, environmental factors, and patterns of behavior. Age-related factors create special challenges in the clinical management of endometrial cancer. It is essential to have a solid understanding of the epidemiological trends associated with the disease in order to devise effective strategies for screening, preventing, and treating the condition (Ledford & Lockwood, 2019).

There is a significant disparity in the incidence of endometrial cancer between different regions of the world as well as different racial and ethnic groups. Differences in geography and racial composition produce distinct epidemiological patterns, which in turn alter the manner in which this cancer is presented and spreads (Crosbie et al., 2022). Research data suggest that the total lifetime risk of uterine cancer in Asian cultures is 1 in 224 females. This demonstrates that there is a unique combination of factors that lead to the predominance of endometrial cancer in this particular community. Further evidence that the development of this disease is influenced by a number of factors, including genetics, the environment, and lifestyle choices, is shown by variations in the prevalence of the illness among geographical regions and ethnic groups (Rowlands et al., 2023). It is essential to have an understanding of the intricacies of these inequalities and to devise prevention and intervention strategies that take into consideration the distinct risk profiles of various groups in order to develop healthcare practices that are more targeted and equitable on a global scale (Saha et al., 2022).

Age stratification plays a significant influence in the occurrence and clinical management of endometrial cancer, thus it is important to understand it. Premenopausal, perimenopausal, and postmenopausal women all have very different hormonal environments and physiological changes that contribute to a dramatically different prevalence of this malignancy (Paterniti et al., 2020). It is crucial for healthcare providers to be aware of these differences in incidence rates so that they may target their screening and prevention efforts on the age groups where the risk is greatest. Endometrial cancer diagnosis and treatment are impacted by the patient's age. Symptoms are comparable to those of less serious illnesses, making diagnosis difficult in younger women. There are distinguishing features of postmenopausal women. Age and health status affect the treatment options available. Age stratification is an important lens through which to view endometrial cancer (Korbecki et al., 2023). This method aids in the understanding of its epidemiology and directs the creation of specific diagnostic and therapeutic approaches that take into account the varying clinical presentations across age groups. This study aimed to compare the frequency of endometrial cancers in women of different ages i.e. pre, peri and post menopausal.

RESEARCH METHODOLOGY

This study was carried out at the MCH Center of the Pakistan Institute of Medical Sciences in Islamabad, Pakistan. It was part of a cross-sectional research project(Gilani et al.). The sample would have been more diverse and more representative of the community as a whole if it had been carried out at a different healthcare facility than the one at which it was actually done.

Sample Size Calculation

The estimated proportion of endometrial cancers was 16.3%, so a sample size of 210 was computed using a confidence range of 95% and an alpha of 5%. This was done so that the sample size would be statistically significant. This approach of rigorous statistical analysis was developed with the intention of producing reliable results.

Stratification and Age Groups

In order to study age-related nuances, the sample was split into three distinct age groups: premenopausal, perimenopausal, and postmenopausal. Premenopausal participants ranged in age from 30 to 40 years old, while perimenopausal participants had ages ranging from 41 to 55 years old. Postmenopausal participants were older than 55 years old. As a result of there being 70 persons in each age bracket, it was possible to ensure that all facets of a person's life were accurately portrayed across the board.

Duration of the Study

The research took place over a period of six months, from January to June in the year 2023. The researchers decided to look at endometrial cancer cases throughout this time frame so that they could account for probable seasonal and cyclical fluctuations in the presentation of cases.

Ethical Considerations

Before anyone could take part in the study, they had to give their written informed consent. This method of protecting research participants' rights ensured that all subjects willingly supplied their informed consent.

Inclusion Criteria

Women within the defined age ranges presenting with suspected of endometrial cancer were considered for participation. The inclusion criteria were to incorporate a varied spectrum of participants who indicated probable signs or symptoms warranting further examination(Raja et al., 2022).

Diagnostic Process

The presence or absence of endometrial cancer was determined after enrollment through a comprehensive diagnostic process. Patients were categorized into those without malignancy and

those with confirmed malignancy, allowing for a comprehensive understanding of the disease spectrum.

Data Analysis

Data analysis was conducted using SPSS version 22.0, applying descriptive and inferential statistics. The baseline characteristics of the study participants were analyzed, and the prevalence of endometrial cancer was compared among age groups. The goal of this analysis was to locate significant relationships and recurring patterns in the data(Gilani et al., 2020).

RESULTS

Table 1: Age Distribution of Respondents

Age Group	Frequency (n)	Percentage (%)
31-40	70	33.3
41-55	70	33.3
>55	70	33.3
Total	210	100.0
Mean Age	45.9	45.9
Range	31-78	31-78

Table 1 provides a systematic presentation of the 210 respondents' most crucial demographic data, including a breakdown by age group. There are a total of 270 participants, 70 in each of the three age groups (those between the ages of 31 and 40, those between 41 and 55, and those aged 55 and more). This method of selection guarantees a cross-sectional representation of all age groups. Each age group's relative importance to the study population is revealed by the numbers in the "Frequency" and "Percentage" columns. This systematic and equal sampling technique allows for a thorough examination of trends and patterns as they relate to age, as each age group accounts for one-third of the total respondents.

The "Mean Age" of 45.9 years is a measure of central tendency that indicates how old most of the respondents are. This measure captures the participants' aggregate age history and serves as a handy benchmark for the age distribution of the study population. The "Range" option, which can be anything from 31 to 78, highlights the age range of the group. Because of this large age range, the study benefits from the inclusion of people at all phases of life and all stages of development.

Table 1 not only provides a basic overview of the demographics of the study population, but also breaks down the age distribution. Having this information allows researchers to investigate potential age-related dynamics and correlations within the framework of the study's aims.

Table 2: Endometrial Cancer Incidence by Age Group

Age Group	Total Cases (n)	Cancer Cases (n)	Cancer Percentage (%)
Pre-Menopausal	70	5	8.0
Peri-Menopausal	70	10	15.0
Post-Menopausal	70	13	19.0
Total	210	45	21.5

Table 2 presents a detailed breakdown of the study population's endometrial cancer incidence across three separate age groups: premenopausal (aged 31–40), perimenopausal (aged 41–55), and postmenopausal (aged 55+). This detailed analysis reveals interesting trends across all age groups. There were 5 incidences of endometrial cancer out of a total of 70 in the pre-menopausal age group (31-40). Endometrial cancer has a greater incidence in the peri-menopausal age group (41–55 years), with 15.0% of persons, or 10 cases out of 70, being diagnosed. The post-menopausal age group (>55 years) displays the highest prevalence at 19.0%, covering 13 instances out of 70. The complex relationship between age and the incidence of endometrial cancer is reflected in the overall incidence rate of 21.5% seen throughout the total study group. Age stratification is important for understanding and treating endometrial cancer across different age groups, and this split helps influence clinical concerns. These results are consistent with the widely held belief that postmenopausal women are at a higher risk of developing endometrial cancer, and they shed light on the complex link between age and this disease. Overall, the study population had a cumulative incidence of endometrial cancer of 21.5% across all age categories, highlighting the need to account for age-specific patterns in epidemiological research and healthcare policy.

In addition to providing an indication of disease prevalence, the reported percentages also provide a springboard for investigating the causes of and potential remedies for each age group. Such in-depth evaluations allow doctors to modify screening and treatment plans based on patients' ages, improving the accuracy and efficiency of endometrial cancer prevention and treatment.

DISCUSSION

It is essential to place findings in perspective and make meaningful comparisons with current studies in the field of health research, and Table 1's age distribution provides a full picture of the demographic characteristics of the study population. Notably, a well-balanced and representative sample of 210 respondents was found after carefully stratifying participants into three unique age categories (those aged 31–40, those aged 41–55, and those aged 55 and above) (Przydacz et al., 2020). The distribution of participants across all age groups is consistent with a pattern reported in some recent studies that sought to be demographically representative. This method allows for stronger comparisons between studies and improves the generalizability of the results (Alsan et al., 2019). With one-third of respondents in each age group, this study helps fill in the gaps in our

understanding of health outcomes at different points in people's lives, in line with efforts to systematically capture age-related trends and patterns.

The mean age (Mean Age) of the sample population is 45.9 years, providing important context for this analysis. By comparing this median age to more recent studies, we may see if the demographic make-up is consistent with broader trends seen in the health sciences. The average age of the study population is important for placing study results in context because some health outcomes may vary by age (Polanin et al., 2019). The "Range" parameter's broad range of values (from 31 to 78 years) further emphasizes the demographic variety present within the cohort. This diversity is a major strength of the study, as it enriches the complexity of the dataset by including viewpoints and experiences from individuals spanning a broad age range. The age distribution of the current study is laid forth in Table 1, which also allows for easy comparisons to more recent studies. Deliberate and systematic sampling, exemplified by an even distribution of participants across age groups, adds to the larger discussion in health research and enhances the study's relevance in light of contemporary scientific inquiries (Abu Talib et al., 2021).

The complex correlation between age and endometrial cancer rates in the sample population is revealed by the data reported in Table 2. Insightful patterns and trends in the study of endometrial cancer can be gleaned from a comparison of previous findings to those of more recent investigations (Sato et al., 2021). First, the age breakdown, which is consistent with previous research, indicates interesting trends in the occurrence of endometrial cancer. The reported greater incidence in the post-menopausal age group (19.0%) is consistent with current literature that identifies post-menopausal women as being more susceptible to endometrial cancer (Dossus et al., 2021). This is in line with recent research that have highlighted the significance of age stratification in understanding the risk profile for endometrial cancer, which can lead to more precise preventative and diagnostic measures.

The total incidence of endometrial cancer in the study population of 21.5% is an important measure for comparison to recent studies. Comparison with other studies can shed light on whether the reported incidence is in line with broader epidemiological trends, and this figure provides a full snapshot of the prevalence within the current study(Zakem et al., 2019). Such analyses have the potential to shed light on the possibility of population-specific differences in endometrial cancer rates. And the percentages shown in Table 2 are useful markers of disease prevalence across age groups. We can learn more about the differences and similarities in endometrial cancer rates among pre-, peri-, and post-menopausal women by comparing these figures to more recent studies. This cross-sectional study helps us better grasp the complex interplay between age and risk factors for developing endometrial cancer(van Weelden et al., 2020).

The discussion surrounding these findings shows the dynamic interplay between age and endometrial cancer risk and emphasizes the clinical implications for healthcare practitioners(Xue et al., 2023). This research shows that adapting screening protocols and therapies to age-specific

patterns is consistent with the latest developments in personalized medicine and improves the accuracy of healthcare delivery. In conclusion, the careful study shown in Table 2 provides useful insights into the prevalence of endometrial cancer among different age groups. By contrasting these data with those of more recent research, we gain a fuller understanding of the context in which they were found, revealing similarities and differences in the prevalence and risk factors associated with endometrial cancer across different populations.

CONCLUSION

Investigation is being done to determine the rate of endometrial cancer that occurs in women before, during, and after menopause. Women who have gone through menopause are at an increased risk. It is essential to have an understanding of the unique characteristics and risks that are connected with each age group in order to facilitate the acceleration of diagnostic and therapy methods. It is necessary for medical professionals to utilize a multidisciplinary approach in order to be able to deliver tailored treatment. With the assistance of continuing research as well as age-specific guidelines, clinical procedures and healthcare treatments have the potential to be modified and improved. Only via the use of tailored treatment programs is it possible to improve healthcare results.

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