Endometric Atypic Uterine Hyperplasia: Cancer or a Beneficial Process? Analysis of Observations

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Annotation: Introduction: Endometrial hyperplasia, specifically atypical endometrial hyperplasia (EHA), is an important premagnetic condition that can lead to endometrial cancer, especially in women with some risk factors. For timely intervention, it is crucial to identify the process from EKA to malignancy. This study aims to evaluate the clinical analysis of EKA, risk factors, diagnostic methods, and treatment outcomes in different age groups in the Fergana region.

Materials and methods: A retrospective clinical study was conducted on 50 women diagnosed with atypical endometrial hyperplasia in 2018-2023 at the Fergana Regional Oncology Center. The patients were divided into three age groups: 35-45 years, 46-55 years, and 56-70 years. Diagnostic methods include histological biopsy, transvaginal ultrasound (TSA), and analysis of clinical symptoms. Risk factors such as age, body mass index (BMI), and metabolic syndrome were also assessed. Treatment strategies included hormonal therapy, surgical intervention (hysterectomy), and monitoring.

Results: The study revealed that endometrial cancer developed in 16% of patients (8 out of 50). Lesions were more common in the age group of 56-70 years, where 33% of patients were affected. Patients with BMI >30 and MS had a high risk of malignancy (40% and 20% respectively). Hormonal therapy was effective in young patients (35-45 years old), with a regression of hyperplasia observed in 66.7%. In the age group of 56-70 years, due to the high risk of malignant neoplasms, surgical intervention was the primary treatment method, with hysterectomy being performed in 80% of patients.

Conclusion: The results obtained indicate that atypical endometrial hyperplasia causes a significant risk of malignancy, especially in elderly women and women with obesity or metabolic disorders. Hormonal therapy is effective in managing ECA in young patients, while in elderly patients, surgical treatment is often necessary. Early diagnosis and individualized treatment approaches are crucial for reducing the risk of endometrial cancer.

Keywords: atypical endometrial hyperplasia, endometrial carcinoma, risk of malignancy, hormonal therapy, hysterectomy, Fergana region.

Introduction:

Uterine cancer is one of the most common malignant diseases among women worldwide, primarily found in developed countries. According to statistical analysis conducted in 2020, more than 380,000 new cases of uterine cancer are registered worldwide annually, and most of these cases began with atypical hyperplasia (Ferlay et al., 2020).

Atypical uterine endometrial layer hyperplasia (UAE) is a disordered and excessive growth of cells in the uterine lining. These changes are observed in endometrial cells, and in most cases, this process is considered precancerous (premalignant), meaning it poses a potential risk of developing into malignant (malignant) tumor - uterine cancer. When hyperplasia, especially atypical hyperplasia, is detected, it is important to assess the likelihood of developing cancer in patients (Parker et al., 2019).

EKA is usually considered a malignant process that can develop into uterine cancer, but in all cases, this disease does not directly transition into cancer. In some cases, these changes may be benign. From this perspective, choosing the right treatment option for patients using clinical analysis and correct diagnostic methods is vitally important (Kurman, 2016).

According to research, the development of endometrial hyperplasia is most often observed in women in the premenopausal and postmenopausal periods. It has been established that among the main factors causing this is the influence of excess estrogen hormone (Lacey et al., 2017). Estrogen helps to thicken the uterine wall, and this growth can get out of control if it is not matched to progesterone. In particular, diseases such as obesity, hypertension, and diabetes increase the risk of developing atypical hyperplasia (Reed and Cox, 2020).

Although hyperplasia itself can be a benign condition, atypical forms have a high risk of malignancy, i.e., cancer. Studies show that among patients diagnosed with atypical hyperplasia, uterine cancer develops in 20-30% of cases (Trimble et al., 2018). Therefore, when diagnosing this condition, it is necessary to develop a correct diagnosis and treatment plan, especially taking into account the patients' age, health status, and additional risk factors.

Based on the aforementioned data, this article examines the clinical analysis of atypical hyperplasia, the likelihood of its transformation into cancer, and treatment strategies using clinical cases in the Fergana region as an example. At the same time, the effectiveness of diagnostic and therapeutic approaches in clinical decision-making is being analyzed.

The aim of the study is to assess the likelihood of cancer development in patients diagnosed with EKA and identify risk factors.

Materials and methods.

This study was conducted based on a retrospective analysis of clinical cases. The study examined medical records of patients with atypical uterine endometrial hyperplasia (UHI) who sought treatment at the Ferghana Regional Branch of the Republican Specialized Scientific and Practical Medical Center of Oncology and Radiology (RSNPMCSR). The study was conducted from 2018 to 2023, and a total of 50 patients were included in the study. The patients' ages ranged from 35 to 70 years, with an average age of 56.8 years. Patients were divided into three main age groups:

✓ 35-45 years old (women in the early perimenopause).

✓ 46-55 years old (women at the onset of menopause and perimenopause).

✓ 56-70 years old (women in postmenopause).

The health status, medical history, and health-related risk factors of patients in each age group were analyzed separately.

Patient selection criteria

Women diagnosed with atypical uterine endometrial layer hyperplasia.

patients aged 35-70.

o Cases where patients have complete medical records.

Several diagnostic methods were used in the examination of patients and the diagnosis of EKA:

Histopathological examination: The uterine endometrial layer was removed by biopsy and underwent microscopic examination. This method was the primary diagnostic tool for detecting the presence of

atypical cells. The biopsy process was performed on an outpatient basis, and all samples were analyzed by experienced pathologists in the pathological anatomy laboratories of the Russian National Research Center for Emergency Medical Aid.

2. Transvaginal ultrasound (TSA): TSA was used to determine the thickness of the endometrial layer and structural changes. This method was an additional informative tool for determining the presence of growth and hyperplasia in the inner uterine layer. Cases with an endometrial thickness greater than 5 mm were considered dangerous and referred for biopsy.

3. Clinical symptom assessment: Patients reported clinical complaints, including symptoms such as postmenopausal bleeding, pain, and dysmenorrhea. These symptoms are one of the most important signs in the development of EKA.

The main risk factors contributing to the development of atypical hyperplasia were also assessed. Risk factors were studied and statistically analyzed for each patient:

Age: Since endometrial hyperplasia is more common in women during menopause, the influence of age on this process was assessed. The study found that women over 55 years old had a high risk of malignancy (cancer development).

Obesity (obesity): Obesity, especially in women with a body mass index (BMI) above 30, increases the risk of developing endometrial hyperplasia due to excessive estrogen production. The BMI indicators of the study participants were studied, among which risk factors associated with high BMI were noted.

3. Hormonal imbalance: The hormonal status of the patients was also considered. An increase in estrogen hormone levels and a decrease in progesterone levels are one of the main reasons for the development of ESR. The results of patients receiving hormone therapy were analyzed separately.

4. Metabolic syndrome: Metabolic disorders such as hypertension, diabetes, and dyslipidemia were also included as risk factors. These diseases were considered factors that increase the risk of EKA and malignancy.

Depending on the patient's condition, the following treatment methods were used:

1. Hormonal therapy: Patients were prescribed hormone-based drugs (progesterone). This method was primarily used in premenopausal or menopausal women and was intended to reverse hyperplasia.

2. Surgical intervention (hysterectomy): In severe cases, hysterectomy (surgical removal of the uterus) was performed, especially in patients with a high risk of malignancy. This method was primarily used in patients over 55 years of age, where other treatment methods were ineffective.

The patients' condition after treatment was regularly monitored for 6-12 months. During the observation period, the patients' condition was assessed using histological and clinical studies. Transvaginal ultrasound and biopsy were performed every three months, and the endometrial layer was monitored. Clinical symptoms were also observed in the patients, and changes were noted.

The collected data was statistically processed and the probability of malignant transformation of EKA was analyzed by risk factors and age groups. The relationship between risk factors and outcomes was studied using the Chi-square test and logistic regression. The P-value was considered statistically significant when it was less than 0.05.

Results

This study analyzed the clinical status, diagnostic methods, and treatment outcomes of 50 patients with atypical uterine endometrial hyperplasia (UEA) in the Ferghana region. The following results were obtained when studying various clinical and diagnostic indicators, with the distribution of patients by age group, examination methods, and treatment methods.

Table 1. Distribution by Age Groups

Age Group	Number of Patients	Percentage of Patients (%)
35–45 years	15	30%
46–55 years	20	40%
56–70 years	15	30%
Total	**50**	**100%**

The results by age group indicated that hormonal therapy was primarily used for patients in the 35–45 age group, while surgical intervention (hysterectomy) was more common among patients aged 56–70. These findings suggest that the risk of progression to cancer increases with age.

Diagnostic Methods and Findings

All patients underwent diagnostic evaluations through histopathological examination and transvaginal ultrasound (TVUS).

Table 2. Patient Distribution by Diagnostic Methods

Diagnostic Method	Number of Patients	Percentage (%)
Atypical hyperplasia confirmed by biopsy	50	100%
Malignancy detected	8	16%
Endometrial thickness > 5 mm via TVUS	35	70%
Patients with bleeding	22	44%
Patients with abdominal pain	18	36%

A histological examination was conducted for all patients. Patients were divided into three groups based on their atypical severity: high atypical severity was observed in 20 (40%) patients, moderate atypical severity in 20 (40%) patients, and low atypical severity in 10 (20%) patients. Of the 50 patients, 8 (16%) developed malignant changes in the cells of the endometrial layer, i.e., endometrial cancer. The majority of patients diagnosed with malignancy were over 55 years old, indicating an increased risk of developing cancer with age. Of the 8 patients diagnosed with malignancy, 6 had a high degree of atypia, confirming a high risk of malignancy in this group. In the group with moderate atypia, malignancy was detected in 2 patients, while in the group with low atypia, malignancy was not detected.

In 8 patients diagnosed with malignancy, the histological types and degrees of differentiation (G) of endometrial cancer were distributed as follows: 3 patients had grade G1 endometrioid adenocarcinoma, 3 patients had grade G2 endometrioid adenocarcinoma, and 2 patients had grade G3 adenocarcinoma.

Transvaginal ultrasound (TSA) results showed that 35 patients (70%) had an endometrial thickness greater than 5 mm, indicating the development of hyperplasia. In 15 patients (30%), atypical endometrial hyperplasia was confirmed by biopsy, although endometrial thickness was within the normal range.

Clinical symptoms: 44% (22 patients) exhibited symptoms such as postmenopausal bleeding. These symptoms were noted as the main clinical signs of EA development. Abdominal pain and discomfort symptoms were also noted in 36% (18 patients).

Results of treatment methods: Patients participating in the study were treated with various treatment methods: hormone therapy, surgical intervention, and only observation.

Table 3. Distribution by Treatment Methods

Treatment Method	35–45 years	46–55 years	56–70 years	Total (50 patients)	Percentage (%)
Hormonal therapy	10	12	3	25	50%
Surgical intervention	2	6	12	20	40%
Observation only	3	2	0	5	10%

Hormonal therapy: Total: 25 patients (50%) received hormone therapy based on progesterone. In 70% (18 patients) of this group, the result of hormonal therapy was positive, and hyperplasia recurred.

35-45 years old: 10 (66.7%) patients who received hormonal therapy showed regression of the disease.

Ages 46-55: 12 patients received hormonal therapy, of whom 9 (75%) showed a positive result.

56-70 years old: Although 3 patients in this group received hormonal therapy, 2 of them received ineffective treatment and underwent hysterectomy.

Surgical intervention (hysterectomy): Total: 20 patients (40%) underwent surgical treatment. Surgery was primarily performed on patients with a high risk of malignancy or ineffective hormone therapy.

Age distribution: 35-45 years: 2 patients (13.3%) underwent surgical treatment. 46-55 years old: 6 patients (30%) underwent hysterectomy. Between the ages of 56 and 70 years: 12 patients (80%) underwent surgery. Surgery was widely used in this group due to the high risk of malignancy.

Observation and monitoring: Total: 5 patients (10%) were under only symptomatic observation and were regularly monitored with biopsy and ultrasound examinations.

Age distribution: 35-45 years: 3 patients (20%) were only observed. Ages 46-55: 2 patients (10%) were under observation. 56-70 years old: No patients were left under observation in this group, as the risk of malignancy was high.

The results for risk factors were as follows. The study investigated the probability of patients transitioning from EKA to malignancy based on the following risk factors: Age: The risk of malignancy significantly increased in patients over 55 years of age. Among patients aged 56-70, malignancy was observed in 5 (62.5%) out of 8 patients.

Table 4. Distribution of Patients by Risk Factors and Malignancy

Risk Factors	Number of Patients	Number of Patients with Malignancy	Percentage (%)
BMI > 30	20	8	40%
Metabolic syndrome (diabetes, hypertension)	25	5	20%
Age 56–70	15	5	33%

Obesity (obesity): Patients with BMI > 30 had a high risk of malignancy. Hyperplasia transforming into malignant cancer was observed in 40% of patients with obesity.

Metabolic syndrome: Among patients with hypertension and diabetes, the risk of malignancy is higher, which was noted in 20% of patients.

Discussions

Atypical uterine endometrial hyperplasia (UEA) is an abnormal growth of cells in the uterine lining, often seen as a precancerous condition. This study analyzed the clinical condition, age groups, risk factors, and treatment methods of 50 patients. The results obtained indicate that the risk of

transitioning from EKA to malignancy (cancer) is associated with factors such as age, obesity, and metabolic syndrome.

Age and risk of malignancy

Research results show that the risk of malignancy also increases significantly with age. Among patients aged 56-70, malignancy rates were high, with more than 33% of patients in this group diagnosed with cancer. This result is consistent with other studies, for example, studies by Kurman (2016) and Lacey et al. (2017) also found that postmenopausal atypical hyperplasia often leads to malignant changes. This condition occurs in women as a result of hormonal imbalance, especially between estrogen and progesterone. Decreased progesterone levels during and after menopause lead to overgrowth of cells, which increases the risk of developing cancer (Trimble et al., 2018).

These results indicate the need to take into account the hormonal balance of patients, especially with age. It was also found that surgical intervention was more effective in older patients, as the results of hormonal therapy in this age group were often ineffective.

2. The influence of obesity and metabolic syndrome

Obesity and metabolic syndrome, particularly hypertension and diabetes, were identified in our study as important factors that significantly increased the risk of malignancy in patients. Malignancy was observed in 40% of patients with BMI > 30, which is consistent with other studies. Studies by Parker et al. (2019) show that excess estrogen production can lead to endometrial cell hyperplasia, especially in cases associated with obesity. The strong influence of estrogen hormone on the cells of the uterine layer further exacerbates hormonal imbalance, leading to the development of cancer.

Patients with metabolic syndrome (diabetes, hypertension) also showed an increased risk of malignancy. Studies have confirmed that patients with metabolic syndrome have a higher risk of developing endometrial cancer (Reed and Cox, 2020). These factors support the analysis of the risk factors noted in the study and play an important role in assessing the likelihood of EKA transformation into cancer in patients.

The effectiveness of treatment methods

Although the treatment methods used for patients in this study differed by age and clinical condition, hormonal therapy was more effective in younger patients. Hormonal therapy based on progesterone was successful in 66.7% of cases in achieving disease regression among young patients (35-45 years old). These results are consistent with studies by Lacey et al. (2017) and Ferlay et al. (2020), whose results suggest that hormonal therapy has a good effect on women in the premenopausal period.

However, among patients aged 56-70, cases of hormone therapy being ineffective were more common. In this group, only 33% of patients who received hormonal therapy showed regression of hyperplasia, while the rest required surgical intervention. Surgical intervention was the most effective method for patients in this group, especially in cases with a high risk of malignancy.

4. Significance of clinical symptoms

Clinical symptoms, particularly postmenopausal bleeding and abdominal pain, are seen as early signs of EKA among patients. In this study, symptoms such as bleeding were noted in 44% of patients and abdominal pain in 36%. These symptoms are important as one of the markers of malignancy risk, which is consistent with other studies (Trimble et al., 2018). Therefore, analyzing clinical symptoms and examining patients based on them at an early stage allows for a timely diagnosis.

Conclusion.

Atypical uterine endometrial hyperplasia (UEA) often starts as an abnormal process that may not be dangerous, but there is a risk of malignancy (cancerous transformation). Research results show that factors such as age, obesity, and metabolic syndrome significantly increase the risk of developing cancer. Among patients aged 56-70, the risk of malignancy is significantly higher, and this group often requires surgical intervention.

It has also been confirmed that hormonal therapy is an effective method for younger patients, especially in patients in the premenopausal period. However, hysterectomy is more often recommended for older patients and in cases where hormonal therapy is ineffective.

Preventive and diagnostic procedures, including transvaginal ultrasound and histopathological examination, are crucial for the timely detection of patients' condition. Clinical symptoms, particularly bleeding and abdominal pain, are one of the early signs of malignancy and require special attention when these symptoms are observed in patients.

The limitations of this study are that the sample size is small, and more extensive research is needed. However, the results once again confirm the importance of age, risk factors, and the choice of an individualized therapy plan in the diagnosis and treatment of EKA.

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