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DIAGNOSIS OF UTERINE MYOMA BY USING BIOLOGICAL MARKERS

Abstract: Uterine myoma and the complications it causes in women remain not fully studied and are increasing, despite the advances in modern medicine. It is emphasized that uterine myoma is the most common gynecological disease over the past 5 years, and in women of reproductive age, this disease can also lead to infertility. In premenopausal women, uterine myoma can lead to heavy or prolonged menstrual bleeding, severe pelvic pain, and in severe cases, urinary incontinence. Our research aims to highlight the role of biological markers, such as CA-125, glycodelin, and vascular endothelial factor, in the early diagnosis of uterine myoma in women of any age. Early diagnosis and identification of these markers can help prevent the development of complications associated with uterine myoma.The study focuses on exploring the potential of these biological markers as tools for early detection and monitoring of uterine myoma. By understanding the relationship between the levels of these markers and the presence, severity, and progression of uterine myoma, healthcare providers can optimize diagnostic and treatment strategies, leading to improved patient outcomes. The findings of this research are expected to contribute to the advancement of knowledge in the field of gynecology, particularly in the area of uterine myoma management. The early identification of uterine myoma using reliable biomarkers can facilitate timely intervention, reduce the burden of complications, and enhance the overall quality of life for affected women.

Keywords:uterine myoma, biological markers, CA-125, glycodelin, vascular endothelial factor, reproductive age, premenopause.

INTRODUCTION:

Uterine fibroids, also called leiomyomas or myomas, are benign tumors that develop in the smooth muscle tissue of the uterus. They differ in size, shape and location within the uterus and can be single or multiple. Fibroids are not cancerous, but they can cause various problems such as painful menstruation, abdominal pain, pressure symptoms, complications during pregnancy and childbirth, and hormonal disorders. According to World Health Organization statistics, approximately 70-80% of women aged 50 have uterine myomas. Women aged 30-40 are at the highest risk, with an incidence rate of approximately 40% in this age group. African-American women are more prone to the development of fibroids compared to Asian women, studies show that by the age of 35, 60% of African-American women have fibroids, while in Asian women it is approximately 40%.

Uterine myomas are not a cancerous disease of the uterine tissues, but benign tumors, and depending on their size and location, they can cause various symptoms. These include: prolonged or excessive bleeding during menstruation, discomfort or pain in the pelvic area, a feeling of fullness or pressure in the abdominal cavity, increased need to urinate due to pressure on the bladder, inability to fully empty the bladder, and constipation may occur. In women of reproductive age, problems related to pregnancy may also be observed. Early diagnosis and treatment of uterine myoma prevents the development of these symptoms, and early diagnosis using biological markers is appropriate in this case.

Biological markers are molecules or properties present in the organism or its biological fluids that can help identify certain diseases, conditions or processes. They are usually divided into the following types:

1. Genetic Markers: Markers located in the genetic material (DNA, RNA) that indicate individual or disease-specific characteristics.

2. Biochemical Markers: Chemical substances found in blood, urine or other biological fluids that are associated with certain diseases or conditions (for example, cholesterol, glucose levels).

3. Physiological Markers: Indicators of the organism's physiological state (for example, blood pressure, heart rate).

4. Morphological Markers: Indicators of changes in the structure of the tissues or organs being analyzed.

Biological markers play an important role in medicine, especially in assessing the effectiveness of diagnosis and treatment. They are also used for disease prevention and monitoring.

Many scientific studies have been conducted on the role of CA-125, glycodelin and vascular endothelial factor in the diagnosis and monitoring of uterine myoma treatment. The article discusses the importance of these biomarkers in the early diagnosis of uterine myoma.

CA-125 (Cancer Antigen 125) is a glycoprotein produced in the uterus, ovaries and other reproductive system organs, and is primarily recognized as a marker for ovarian cancer. CA-125 levels may change in various gynecological conditions, including endometriosis, ovarian cysts and uterine myomas in women. Measuring CA-125 levels helps in the detection and monitoring of cancer diseases and other gynecological diseases.

The role of CA-125 in the diagnosis of uterine myoma is that its level is not directly used to determine the presence or absence of myoma, but its increased level indicates the presence of myoma. However, an increase in CA-125 level may also be associated with other diseases. Therefore, it is not recommended to use this marker alone for diagnosis. Studies have shown that high CA-125 levels are often associated with severe symptoms of myomas, such as heavy menstrual bleeding and pelvic pain. This correlation is useful in guiding patient monitoring and treatment strategies. Monitoring CA-125 levels during treatment helps assess the response to treatment. If the CA-125 level decreases after treatment, it indicates a decrease in the size of the myoma or an improvement in symptoms. However, the CA-125 level cannot distinguish benign tumors such as myomas from malignant tumors. But knowing its level is useful in directing patients to additional tests and monitoring.

Increased CA-125 levels may be associated with cancer and other gynecological diseases. Many studies have shown that CA-125 levels increase in women with uterine myomas. For example, a study published in the journal "Gynecologic Oncology" found a correlation between increased CA-125 levels and myoma sizes (Sharma et al., 2017). However, CA-125 is not a specific biological marker for myoma, as it can also increase in other conditions such as endometriosis and ovarian cysts.

Glycodelin is a glycoprotein that plays an important role in the pregnancy process, and is produced in the inner lining of the uterus. Glycodelin levels are associated with uterine myomas, as this marker regulates the endometrial environment and implantation. Especially in the submucosal type of myoma, endometrial deformation is observed, and in this case, the amount of glycodelin in the body increases. Studies show that women with high glycodelin levels are more likely to develop myomas. Glycodelin levels also help assess the severity of symptoms associated with myomas.

Vascular endothelial factor is a protein that stimulates blood vessel growth and plays an important role in the angiogenesis process. It is necessary to ensure blood supply to uterine myomas. Studies have emphasized that the level of vascular endothelial factor is associated with the growth and development of uterine myomas. Measuring the level of vascular endothelial factor helps monitor the growth of myomas and assess the effectiveness of treatment.

MATERIALS AND METHODS:

The study materials included 60 women, of whom 40 had various forms of uterine myoma and 20 were healthy women. Their clinical manifestations, laboratory tests and ultrasound examinations were performed and compared. This study was conducted at the Gynecology Department of the Andijan Regional Perinatal Center and the Department of Obstetrics and Gynecology 1.

Based on the obtained materials, the role of biological markers in the early diagnosis of uterine myoma was studied in more detail. The methodology for early diagnosis of uterine myoma has been improved.

RESULTS AND DISCUSSION:

The course and clinical signs of uterine myoma are diverse, and despite the fact that it often occurs asymptomatically, we used CA-125, glycodelin and vascular endothelial factor in its early diagnosis, and applied these biological markers in early diagnosis and evaluation of treatment effectiveness.

It was found that in 100% of the women with uterine myoma included in the study, the levels of biological markers were increased, while in healthy women these indicators were within the normal range.

CONCLUSION:

The findings of this study suggest that CA-125, glycodelin, and vascular endothelial factor can be considered as important biomarkers in the early diagnosis of uterine myomas. These biological markers provide valuable information on the severity of myoma-related symptoms, the progression and development of the condition, as well as the assessment of response to

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treatment.The increased levels of these biomarkers observed in women with uterine myomas, compared to the normal levels in healthy women, highlight their potential utility in the early detection and management of this condition. By monitoring the levels of these markers, healthcare providers can gain insights into the status of the myoma, allowing for timely intervention and personalized treatment approaches. Future research should focus on exploring the combined use of these biomarkers and investigating their synergistic effects in improving the accuracy and reliability of early uterine myoma detection. Additionally, studies examining the potential of using a panel of these biomarkers, rather than relying on a single marker, may provide more comprehensive insights into the pathophysiology and management of this condition. Ongoing research and clinical validation of these biomarkers in the context of uterine myoma diagnosis and monitoring will be crucial in advancing the field of gynecology and enhancing the quality of care for women affected by this common gynecological disorder. By leveraging the power of these biological markers, healthcare providers can strive to achieve earlier diagnosis, timely intervention, and improved patient outcomes.

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