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Ирназарова Динара Хамидилоевна,
базовый доктор

Юлдашева Дилчехра Юсупхоновна,
PhD, DSc, доцент

Нажмутдинова Дилбар Камаритдиновна,
д.м.н., профессор, заведующая кафедрой

Магзумова Наргиза Махкамовна,
д.м.н., профессор

Каюмова Дилрабо Талмасовна,
PhD, к.м.н., доцент кафедры

Ташкентская медицинская академия,
кафедра Акушерства и Гинекологии #2

Ташкент, Узбекистан

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ВЛИЯНИЕ ИЗБЫТОЧНОГО МАССЫ ТЕЛА И ДЕФИЦИТА ВИТАМИНА D НА КЛИНИЧЕСКОЕ ТЕЧЕНИЕ МИОМЫ МАТКИ

Irnazarova Dinara Khamidiloyevna,
MD, PhD doctoral student

Yuldasheva Dilchekhra Yusupkhonovna,
MD, PhD, DSc

Najmutdinova Dilbar Kamaritdinovna,
DSc, Head of the Department

Magzumova Nargiza Mahkamovna,
DSc Professor

Kayumova Dilrabo Talmasovna
PhD

Tashkent Medical Academy, Department of Obstetrics and Gynecology #2,
Tashkent, Uzbekistan

EFFECTS OF EXCESS BODY WEIGHT AND DEFICIENCY OF VITAMIN D ON THE CLINICAL COURSE OF UTERINE MYOMA

Аннотация.

Миома матки является самым распространенным доброкачественным гинекологическим заболеванием, патогенез которого не полностью изучен. Нами обследованы 152 женщины во II клинике Ташкентской медицинской академии. Изучена насыщенность организма витамином D (25(OH)D) и её связь с сопутствующим ожирением у пациенток с миомой матки и здоровых женщин. У менее половины женщин с симптомной миомой превалирует дефицит и выраженный дефицит витамина D с сопутствующим ожирением различной степени. Изучение связи дефицита витамина D с избытком массы тела при данной патологии дает возможность прогнозировать развитие заболевания, характер течения и риск возможных осложнений.

Abstract.

Uterine fibroids is the most common benign gynecological disease, the pathogenesis of which is not fully understood. We examined 152 women in the II clinic of the Tashkent Medical Academy. The saturation of the body with vitamin D (25 (OH) D) and its relationship with concomitant obesity in patients with uterine fibroids and healthy women were studied. In less than half of women with symptomatic myoma, deficiency and severe deficiency of vitamin D prevails with concomitant obesity of varying degrees. Studying the relationship between vitamin D deficiency and excess body weight in this pathology makes it possible to predict the development of the disease, the nature of the course and the risk of possible complications.

Ключевые слова: миома матки, витамин D (прогормон D), факторы риска, индекс массы тела (ИМТ), ожирение.

Keywords: uterine fibroids, vitamin D (prohormone D), risk factors, body mass index (BMI), obesity.

Leiomyomas are benign clonal tumors in women [11]. Uterine fibroids (UF) are diagnosed in 30-35% of women of reproductive age, more often in late reproductive age [16], and in 1/3 of patients it becomes

symptomatic [1,18,20], and by the age of 50 - more than 80% of women [17, 18].

The authors describe the risk factors for the development of fibroids (age before menopause, black race,

obesity), reproductive (infertility, earlier menarche, use of oral contraception up to 16 years, etc.) and environmental (diet, reduced insolation, leading to vitamin D deficiency, environmental toxins environment) factors that are the subject of current research [12,13]. Given the high prevalence of the disease in the population, at the present stage, the study of risk factors in the development of the disease is one of the topical, but, unfortunately, not fully studied issues in gynecology and is still a subject of discussion. According to many researchers, obesity is a significant potentiating endocrine factor of the disease and occurs in women with fibroids higher in 25-70% of cases [2].

Several studies show that vitamin D deficiency is a risk factor for the development of uterine fibroids [8,9,12,19,21,23]. The protective role of vitamin D on the growth of fibroids has been demonstrated during in vitro [10] and in vivo [8] studies, as well as retrospective clinical studies [3], which indicate the existence of a clear protective effect of vitamin D on the growth of fibroids, which is based on inhibition of cell proliferation, stimulation of apoptosis and other pharmacodynamic effects. The next logical step would be to demonstrate the inhibitory effect of vitamin D in humans, which would require clinical research. The authors argue that vitamin D deficiency is associated with fibroids and that supplementation helps nodule shrinkage and disease regression [14,25].

The aim of the study is to identify the level of vitamin D supply and the degree of obesity, and their relationship with the clinical course in women with uterine fibroids.

Materials and research methods. The design was a prospective controlled cohort study. The study was based on clinical and laboratory examination of 152 women who were admitted to the II clinic of the Tashkent Medical Academy. The surveyed women were divided into 2 groups: the control group consisted of 50 healthy women and the main group of 102 women with uterine myoma. The main group of patients was divided into 2 subgroups - 53 women with symptomatic myoma and 49 women with asymptomatic. [15].

During the observation period, all women underwent identification of risk factors according to a modified scale recommended by the guidelines, general clinical examination, ultrasound of the uterus and appendages with duplex scanning of the uterine artery, morphological studies of aspirates from the uterus. Vitamin D saturation marker, 25 (OH) D, was determined by quantitative ELISA — chemiluminescence micro-particle analysis (CMIA) [7]. Mathematical processing and statistical analysis of the results obtained were carried out using the program "Statistika 6.0".

Research results and discussion. The age of the examined women in the main group was 19-55 years old, the average age in the first subgroup was 44.35 ± 0.83 (n = 53) and in the second subgroup 42.6 ± 0.7 years (n = 49), which corresponds to the authors' data [6,16,22], that fibroids are more often diagnosed in the late reproductive period. Whereas in the control group (n = 50), the average age was 40.12 ± 0.7 years (p < 0.01).

Ultrasound examination of the localization of the myoma node in the thickness of the uterus in both groups of the main group was dominated by the intramural node (71.7% and 63.2%, respectively, groups. Mixed myoma nodes in women with symptomatic myoma were 2 times more frequent than in women with asymptomatic myoma (13.2% and 6.12%, respectively.) The median uterine volume calculated using the Brunn formula (1981) in the subgroup with symptomatic UF was 237.54 mm³, asymptomatic UF - 103.45 mm³ and in the control group - 52.1 mm³.

According to the analysis of risk factors, factors such as excessive BMI prevailed ($29.7 + 11.83$ and $28.1 + 0.08$ kg / m², respectively, for subgroups and in the control group $23.3 + 0.01$ kg / m², p < 0, 01), burdened obstetric and gynecological history. According to WHO (2012), vitamin D levels are affected by dietary intake of vitamin D and factors affecting its absorption metabolism, as well as obesity. Researchers have described the relationship between excess BMI and vitamin D deficiency [9,24]. Our analysis to identify excess BMI showed that in 47.2% of women with symptomatic UF, obesity of I, II, III degrees was calculated (28.3%, 11.3% and 7.5%, respectively) [15].

Women with symptomatic myoma of the main group (n = 53) applied to different clinics: the symptom of bleeding and anemia prevailed to a greater extent in 83.01% (n = 44), of which 16.9% underwent blood transfusion due to severe anemia; a symptom of rapid growth - 9.43% (n = 5), a symptom of infertility in 5.6% (n = 3) and a symptom of pelvic pain (n = 2) 3.77%.

The status of vitamin D in the studied women showed that the values in the group of women with fibroids ranged from 4 to 36 ng / ml and averaged $16.7 + 1.8$ ng / ml, which turned out to be significantly lower than in healthy women (p < 0.001). It is important to note that, according to the researchers, the determination of the initial serum level of prohormone 25 (OH) D by laboratory methods is the most acceptable, reliable and clinically significant for assessing the saturation of vitamin D in the human body [5]. When assessing the content of vitamin D in the blood in the structure of the main group in women with symptomatic UF, the average was $11.84 + 0.46$ ng / ml and in asymptomatic women - $21.54 + 0.04$, while in the control group it was $29.83 + 1.13$ ng / ml (p < 0.001). At the same time, a pronounced deficiency of prohormone D was detected in the subgroup of symptomatic UF $6.62 + 0.9$ ng / ml in 37.7% of women with an obvious clinical manifestation of menorrhagia (in 100%) and a recurrent course of the disease, and in the subgroup of asymptomatic myoma in 1/3 patients (36.7%) have a deficiency of vitamin D $16.7 + 1.6$ [4]. The prohormone values in the control group differed significantly (p < 0.001).

When comparing vitamin D indices between the subgroups of the main group, statistical differences were significant, which indicated the presence of a relationship between the level of vitamin D saturation in women with UF and clinical manifestations of the disease, the size of the uterus. The distribution of women according to the degree of vitamin D provision, based on its content in the blood [15], showed a significant

difference between the subgroups of the main group and healthy ones.

In the main group of women with asymptomatic UF, normal values of vitamin D were only 4.08% of cases, insufficiency - in more than half (59.2%) and deficiency - in 1/3 of women, in the subgroup of symptomatic myoma, normal values were not found in women, deficit - 54.7% and pronounced deficit - 37.7%, which is 2.88 times more than in the group of asymptomatic myoma and 5.4 times more than in the control group. It is noteworthy that, despite the absence of the disease, 52% of healthy women had an insufficient level and deficiency of vitamin D in the blood, in a country with sufficient insolation. Correlation analysis showed a direct weak positive relationship in the control group between the blood vitamin D content and BMI ($r = 0.345$, $p < 0.001$), that is, the normal BMI level corresponded to the normal values of vitamin D; whereas the correlation between these indicators in the main group, especially in the subgroup of symptomatic myoma, was a direct mean positive ($r = 0.482$, $p < 0.001$).

When analyzing the odds ratio of developing fibroids (OR) in women, it was shown that the factor of lack of prohormone D (OR = 16.13) and excess weight (OR = 7.38) are a promoter factor for the development of severe clinical symptoms of the disease in these women, reducing the quality the lives of the women of this cohort.

Conclusion. Our results showed that lower values of vitamin D in patients with fibroids with concomitant excess BMI and obesity can affect the nature of the course of the disease and the incidence of complications. Patients with severe vitamin D deficiency in the subgroup of symptomatic uterine myoma (<10 ng / ml) had vivid clinical manifestations of the disease: menorrhagias leading to anemization of women of this category, rapid growth of the myomatous node against the background of critical vitamin D deficiency and obesity accompanying the pelvic pain, infertility. In women with symptomatic myoma, the level of vitamin D was significantly lower in the group compared to the group with asymptomatic myoma. A positive correlation between blood vitamin D and an elevated BMI is especially noted in the subgroup of symptomatic uterine fibroids. Further studies to detail the mechanisms of the effect of vitamin D and the modifying factor - obesity on the course of uterine fibroids may in the future find wide application in the field of health care and become the basis of modern personalized medicine, since it makes it possible to predict the development of the disease, the nature of the course and the risk of possible complications.

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