AMERICAN ACADEMIC PUBLISHER

INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

ISSN NUMBER: 2692 - 5206 Volume 5. No 11. November ,2025

MODERN IDEAS ABOUT THE PRINCIPLES OF TREATMENT OF UTERINE FIBROIDS IN FERTILE WOMEN WITH METABOLIC DISORDERS

Mukhitdinova H.S.
Asian International University

Uterine fibroids (leiomyoma) are one of the most common benign neoplasms of the female reproductive system, which have a significant impact on fertility and quality of life. Metabolic disorders, including obesity, insulin resistance, dyslipidemia, and metabolic syndrome, are becoming increasingly common among women of reproductive age and have an impact on the pathogenesis, growth, and clinical course of fibroids. This article examines modern ideas about the relationship between fibroids and metabolic disorders, analyzes the mechanisms of the influence of the metabolic background on the development of myomatous nodes, and provides current recommendations for drug, surgical, and conservative therapy with an emphasis on preserving reproductive function. Special attention is paid to a personalized approach, multidisciplinary follow-up and relapse prevention.
Keywords: uterine fibroids; fertility; metabolic syndrome; insulin resistance; treatment; myomectomy; conservative therapy; hormone therapy.

Introduction

Uterine fibroids— a benign neoplasm of the smooth muscle tissue of the uterus, occur in 30-70% of women of reproductive age, with variability depending on ethnicity and related factors (Baird et al., 2022). These neoplasms may be asymptomatic, but they are often accompanied by heavy menstrual bleeding, anemia, pain, and impaired fertility. At the same time, there is an increase in the prevalence of metabolic disorders in women of reproductive age, including obesity, insulin resistance, dyslipidemia, and metabolic syndrome.

Modern research demonstrates that the metabolic background influences the development, growth and clinical course of fibroids. Mechanisms include increased peripheral aromatization of androgens into estrogens due to adipose tissue, increased levels of insulin and insulin-like growth factor 1 (IGF-1), as well as systemic inflammation (Ciebiera et al., 2021). These changes create an environment conducive to the proliferation of the myometrium and the progression of myomatous nodes.

For fertile women, the presence of fibroids in combination with metabolic disorders is a special clinical challenge. The main goal of therapy is to reduce symptoms, minimize the risk of complications, and preserve reproductive function. Modern approaches require a comprehensive, personalized approach, taking into account metabolic status and reproductive health plans.

Metabolic factors and pathogenesis of uterine fibroids

The impact of obesity

Obesity is associated with an increased level of peripheral estrogens due to aromatization of androgens in adipose tissue, which stimulates the proliferation of the myometrium. Moreover, obesity is associated with systemic chronic inflammation, elevated levels of C-reactive protein, interleukins, and growth factors that contribute to an increase in the volume of myomatous nodes (Wise et al., 2021).

Insulin resistance and IGF-1

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 5. No 11. November ,2025

Hyperinsulinemia and increased IGF-1 have a direct mitogenic effect on smooth muscle cells of the myometrium, contributing to the growth of fibroids. Insulin resistance also disrupts the balance of sex hormones and can reduce the effectiveness of hormone therapy.

Metabolic syndrome and dyslipidemia

Women with metabolic syndrome show a higher frequency and larger sizes of myomatous nodules. Dyslipidemia, hyperglycemia, and hypertension pose an additional risk of disease progression and recurrence after therapy.

The influence of microbiota

Recent studies have highlighted the role of the gut microbiota in regulating metabolism and endocrine functions, which may indirectly influence the growth of fibroids. Disruption of the microbiota is associated with systemic inflammation and changes in the metabolic profile (Zhang et al., 2023).

Modern principles of treatment

Correction of the metabolic background

Optimization of body weight, correction of insulin resistance and dyslipidemia is a basic component of therapy. This includes lifestyle changes, a balanced diet, physical activity, and, if necessary, pharmacological correction of metabolic disorders (metformin, inositol).

Drug therapy

GnRH agonists and antagonists (relegolix, elagolix) reduce the volume of nodes and reduce blood loss, but they can affect the ovarian reserve with prolonged use.

Selective progesterone receptor modulators (SPRMs) are effective in reducing symptoms, but require monitoring of liver and endometrial function.

Dopamine receptor agonists and antiestrogenic drugs may be used in some cases with concomitant hyperprolactinemia or endocrine disorders.

Organ-preserving surgical methods

Hysteroscopic myomectomy is the preferred method for submucous nodules, minimal damage to the myometrium, and high preservation of reproductive function.

Laparoscopic myomectomy is suitable for intramural and subserous nodules, which reduces postoperative adhesions.

Focused ultrasound (HIFU) is a non—invasive technology that is promising for individual nodes.

Special attention is paid to the preparation for surgery in women with metabolic syndrome, given the increased risk of thrombotic complications and healing disorders.

Combined approach and observation

Regular monitoring of fibroid size, symptoms, metabolic status, and ovarian reserve allows timely adjustment of therapy. The multidisciplinary team ensures the individualization of the approach.

Promising areas

The use of metabolomics and genomics to predict fibroid growth and therapy selection.

Correction of the intestinal microbiota as an auxiliary method.

Research of new SPRMs with minimal impact on ovarian reserve.

Conclusion

Modern ideas about the treatment of uterine fibroids in fertile women with metabolic disorders emphasize the need for an integrated approach. The metabolic background directly affects the growth of fibroids and the effectiveness of therapy. Optimization of body weight, correction of

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 5. No 11. November ,2025

insulin resistance and dyslipidemia, personalized drug and surgical therapy help preserve reproductive function and reduce the risk of relapses. Multidisciplinary strategy, individualization of approach and use of modern technologies are key elements of successful management of such patients.

Литература

1. Ma, Y., Weng, J., & Zhu, Y. (2024). Impact of serum lipid on recurrence of uterine fibroids: a single-center retrospective study. *BMC Women's Health, 24*, 677. https://doi.org/10.1186/s12905-024-03530-0 BioMed Central
2. S. E. S., A. P., V. V., R. M., & M. B. (2024). Glycolytic reprogramming in uterine fibroids: genetic, transcriptomic, proteomic, and metabolomic insights. *Genes, 16*(11), 1268. https://doi.org/10.3390/genes16111268 MDPI
3. Ciebiera, M., et al. (2023). *The etiopathogenesis of uterine leiomyomas: A review*. Гинекология, 25(1), 22-30. https://doi.org/10.26442/20795696.2023.1.201827 g-academy.ru
4. Olusi, A. M., Rabiu, K. A., Oduola-Owoo, B. B., Rasheed, M. W., Oduola-Owoo, L. T., & Windapo, O. B. (2024). Relationship between Metabolic Syndrome and Uterine Leiomyoma: A case-control study. *The Nigerian Health Journal, 24*(1). https://doi.org/10.60787/tnhj.v24i1.765 tnhjph.com
5. Alexander, K. G., Lee, S-Y. C., Haddad, C. N., & Tanos, V. (2024). Minimally invasive techniques in myomectomy and fertility outcomes: A narrative review of the current evidence. *Clinical and Experimental Obstetrics & Gynecology, 51*(7), 151. https://doi.org/10.31083/j.ceog5107151
6. Бакиева, М. Ш., Рустамова, Ш. Р., Рахмонов, Т. О., Шарипова, Н. Н., & Мухитдинова, Х. С. (2022). Гипотензивное действие алкалоида бензоилгетератизина на функциональную активность гладкомышечных клеток аорты крысы. *AcademicResearchJournalImpactFactor*, *7*.
7. Samixovna, M. K. (2024). MORPHOLOGICAL DATA OF THE ORGANS OF HEMATOPOIESIS AND HEMATOPOIESIS. Лучшие интеллектуальные исследования, 14(5), 66-74.
8. Samixovna, M. K. (2024). Morphologic Changes in Red Blood Cells. ResearchJournalofTraumaandDisabilityStudies, 3(3), 178-186.
9. Samixovna, M. K. (2024). MORPHOLOGICAL FEATURES OF POSTPARTUM CHANGES IN UTERINE MEMBRANES. SCIENTIFIC JOURNAL OF APPLIED AND MEDICAL SCIENCES, 3(4), 277-283.
10. Samixovna, M. K. (2024). Current Data on Morphological and Functional Characteristics of the Thyroid Gland in Age Groups. JournalofScienceinMedicineandLife, 2(5), 77-83.
11. Samixovna, M. X. (2024). AYOL ORGANIZMI REPRODUKTIV ORGANLARINING RIVOJLANISH XUSUSIYATLARI. *ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ*, *55*(2), 113-121.
12. Samixovna, M. X. (2024). OITS KASALLIGI, TA'RIFI VA KASALLIKNING KELIB CHIQISH SABABLARI. *ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ*, *55*(2), 122-133.
13. Мухиддинова, Х. С. (2024). РАЗВИТИЕ ЯИЧНИКОВ, ИХ МОРФОЛОГИЯ И ОСОБЕННОСТИ ФУНКЦИОНИРОВАНИЕ. *ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ*, *55*(2), 134-141.

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 5. No 11. November ,2025

14. Мухитдинова, Х. С. (2024). СОВРЕМЕННЫЕ ВЗГЛЯДЫ НА РАЗВИТИЕ БАКТЕРИАЛЬНОГО ВАГИНОЗА У ЖЕНЩИН ФЕРТИЛЬНОГО ВОЗРАСТА. *ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ*, *55*(2), 97-103.
15. Мухитдинова, Х. С. (2024). ЗАБОЛЕВАЕМОСТЬ СПИДОМ, МОРФОЛОГИЧЕСКИЕ ОСОБЕННОСТИ БОЛЕЗНИ. *ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ*, *55*(2), 104-112.
16. Samikhovna, M. K. (2024). MODERN VIEWS ON ACROMEGALY AND IMMUNOMORPHOLOGY OF THIS DISEASE. *EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE*, *4*(10), 179-183.
17. Mukhitdinova, K. S. (2024). Clinical and Morphological Aspects of the Functioning of the Lymphatic System. *International Journal of Alternative and Contemporary Therapy*, *2*(9), 101-106.
18. Samixovna, M. X. (2025). BACHADON BO ‘YNI RAKINING ZAMONAVIY TASHXISOTI VA PROFILAKTIKASI. Modern education and development, 19(3), 305-315.
19. Samixovna, M. X. (2024). BACHADON BO ‘YNINING KASALLIKLARDAGI KLINIKO-MORFOLOGIK AHAMIYATI. *Modern education and development*, *16*(11), 73-84.
20. Samixovna, M. X. (2024). BACHADON ENDOMETRIYSINING HOMILADORLIK YUZAGA KELISHIDAGI AHAMIYATI. *Modern education and development*, *16*(11), 51-61.
21. Samixovna, M. X. (2024). AYOLLARDA TUXUMDONLARDAGI SARIQ TANANING KLINIKO-MORFOLOGIK XUSUSIYATLARI. *Modern education and development*, *16*(11), 131-142.
22. Мухитдинова, Х. С. (2024). КЛИНИКО-МОРФОЛОГИЧЕСКИЕ ОСОБЕННОСТИ ЖЕЛТОГО ТЕЛА В ЯИЧНИКАХ У ЖЕНЩИН. *Modern education and development*, *16*(11), 143-154.