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PREVENTION OF INFERTILITY IN WOMEN OF REPRODUCTIVE AGE WITH OBESITY AND VITAMIN D DEFICIENCY

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Topicality of the Topic

Infertility is a serious pathology that negatively affects many factors, including divorce, stress, and reduced labor productivity, which lead to significant economic losses caused by the treatment of infertile couples(Kulakov V. I., Leonov B. V., 2018).

In Central Asia, where large families are common and traditionally encouraged, childlessness is considered a great misfortune and often leads to family breakdown. (Ikhtiyarova G. A., Kurbanova Z. Sh., 2020).

WHO data show that in specialized clinics in developed countries, 22% of infertility cases are "male", 32% - female. In 21% of cases, violations are combined, in 14% the causes are not established (V. N. Lokshin, Dzhusubalieva T. M., 2019). Vasilevskaya L. N. (2018) and Podzolkova N. M. (2019) note that the frequency of infertility ranges from 10-20%, and in 50% of cases there is female infertility, in 40% of cases - male infertility, in 10% of cases there are mixed forms.

Keywords: prevention, infertility, obesity, vitamin D

Introduction

In recent years, there has been a tendency to increase the percentage ofinfertile children. According to the WorldHealth Organization (WHO), the percentageof women suffering from infertility ranges from 8 to 29%, with no downward trend inall countries of the world (WHO, 2011).

Infertility treatment measures are quite complex. These include hormone therapy, antibiotics, and complex physiotherapy procedures, but unfortunately, зачастую я simple factors such asnutrition and micronutrient availability are often overlooked. Meanwhileде, a lack of micronutrients and, in particular, vitamin D dramatically reduces the effectiveness of infertility treatment. This is due to the fact that vitamin D plays a very important role in the regulation of reproductive processes in both women and men. This fact is due to the fact that vitamin D

receptors are present in theovarian tissue, endometrium, fallopiantubes, as well as in the decidual membrane andplacenta. Vitamin D is involved in steroidogenesis and, according to studies, is included in the pathophysiology of somediseases in women of reproductive age who under goassistedre productive technology (ART) procedures [2].Vitamin D is, кoa fat-soluble vitamin that belongs to the family of steroid hormones

The biological effects of vitamin D are realizedthrough the eponymous receptor(VDR gene) - a transcription factor activated by1,25-dihydroxyvitamin D3 (calcitriol). Genomiceffects of vitamin D andhave an impact on the human reproductive system (Fig. 1) [3].

The vitamin D receptor (VDR) and vitamin D metabolism enzymes are found in significant amounts in the tissues of the reproductive system of both women and men. When делethe VDR gene is activated, there is a significant gonadal- insufficiency, a decrease in the numberof spermatozoa and theirmobility, as well as histological abnormalities of the ovaries and uterus. The biological activity of vitamin D is very important for the femalereproductive system, asit supports the onset of pregnancy. Vitamin D affects the steroidogenesis- of estradiol and progesterone [4], the synthesis of anti-Muller hormone (AMH), and reduces endometrial hyperandrogenism and hyperproliferation [5] Currently, there are convincing data on the relationship between vitamin D metabolism and the development of certain gynecologicaldiseases.

When examining women with infertility referred to assisted reproduction centers, a highprevalence of vitamin D deficiency was revealed. Pronounced vitaminD – 25(OH) deficiencyD<30 ng/ ml wasobserved in 113 (98%) patients [6]. Another study included 1,072 women (mean age 36.3 + / - 4.4 years) who were deficient in vitaminA D-25 (OH)D<30 ng/ mlwas observed in 77% of the participants. Urovni 25(OH)D was inverselyproportional to body mass index [7].

Thus, more and moree врачи, занимающиеся infertility doctors began to think about the importance of using vitamin D in the co-complex therapy of female infertility.

Objective

To determine the condition of women of reproductive age with impaired vitamin D metabolism with infertility on the background of obesity using a questionnaire.

Materials and Methods

Women of reproductive age with infertility on the background of obesity were identified from outpatient records and invited to an appointment. A questionnaire was compiled, anthropometric studies were performed to determine body weight: body mass index [BMI], waist circumference [OT], hip circumference [OB], and the amount of fat mass. The measurement was carried out using standard medical scales; ultrasound of the genitals,

psychological status, nutrition, laboratory research methods, as well as determination of 25 (OH) D in blood serum, consultation with related specialists (obstetrician-gynecologist).

When examining women with infertility referred to assisted reproduction centers, a high prevalence of vitamin D deficiency was found. Severe vitamin D – 25(OH)deficiencyD<30 ng/ ml was observed in 113 (98%) patients [6]. Another study included 1,072 women (mean age 36.3 + / - 4.4 years) with vitamin D – 25(OH)deficiencyD<30 ng/ ml – was observed in 77% of participants. Levels 25 (OH)D was inversely proportional to the body mass index [7].

Results and Discussion

During the outpatient examination and questionnaire survey of women of reproductive age, 150 infertile women of reproductive age with overweight and obesity were found to have the following disorders: general weakness-30%, anxiety-25 %, sleep disorders or insomnia-35%, decreased sexual desire-4%. In the study of BMI: overweight-20%, grade 1 obesity-42%, grade 2 obesity-28%, grade 3 obesity-10%. The leading factors for the occurrence of endocrine infertility in women of reproductive age in our observations were PCOS-24 (33.3%), hyperprolactinemia-19 (26.4%) and hyperandrogenism-18 (25%) cases. The hormonal profile was studied in all women with the determination of the content of gonadotropic, steroid and thyroid hormones (FSH, LH, PRL, testosterone, estradiol, progesterone, TSH, TK, T4)

Laboratory diagnostic data: FSH-phase 1 25-30 mEd/ ml -7%, Phase 2 15-18 mEd/ml-3%, LH-1 phase 34-40 mEd/ ml-4%, Phase 2 26-30 mEd/ml -6%, PRL 35-40 ng/ml-5%, testosterone 4- 8 nmol/ l-5%, estradiol phase I-20-50 pmol/ l-11%, progesterone phase 1 0.2-0.8 nmol/l-9%, TSH-8.0-14 mEu/l-13%, TK-0.8 -2 pmol/l-7%, T4 - 0.1-0.5 ng/dl- 12%.

In the study of infertile patients (n=335, age 18-42 years, body mass index 18-25 kg/m2), resorting to high-tech reproductive technologies, it was found that the levels of 25(OH)D<20 ng/ ml was observed in 45% of the participants. Clinically recordedменpregnancy after IVF was recorded in 20% of participants in the vitamin D-deficient subgroup and in 31% in the 25(OH)subgroupD>20 ng/ ml (p=0.02). The odds of achieving a clinical pregnancy were 2 times higher in women with 25(OH)years of age. D≥20 ng/ ml (relative risk-RR 2.15; 95% confidence interval-CI 1.23-3.77). Women in the group with normal levels of 25(OH)D in the blood serum (more than 30 ng/ ml), had the highest chances of pregnancy [28].

In general, the current treatment strategy for women with infertilityshould include thediagnosis of vitaminD deficiency by determining25(OH)concentrationsD inblood serum and correctionof vitamin D deficiency upto 25(OH)levelsD in 30 ng/ ml or more.

Conclusions

1. The data will help determine the leading factors of infertility in women of reproductive age with overweight and obesity, and will also allow develop principles of primary prevention for them.
2. Implementation of the research results in practical healthcare will help reduce infertility among women of reproductive age.

References

1. N. V. Gorbatenko, Bezhenar V. F., Fishman M. B. Influence of obesity on the development of reproductive dysfunction in women// Obezhirenie i metabolizm [Obesity and Metabolism], 2017, vol. 14, no. 1, pp. 3-8.
2. Gromova O. A., Torshin I. Yu.,Jijikhiya L. K., Gogoleva I. V. The role of vitamin D in the prevention and treatment of female infertility// Gynecology. - 2016. - Vol. 18, No. 3.- P.34-39.
3. Irani M, Merhi Z. Role of vitamin D in ovarian physiology and its implication in reproduction: a systematic review. // FertilSteril 2014; 102 (2): 460-8.
4. Merhi Z et al. Vitamin D alters genes involved in follicular development and steroidogenesis in human cumulus granulosa cells. // J Clin Endocrinol Metab 2014;99 (6): E1137-45;
5. Bosdou JK, Konstantinidou E, Anagnostis P. et al. Vitamin D and Obesity: Two Int eracting Players in the Field of Infertility. //Nutrients. 2019 Jun 27;11(7):14
6. . Saidova L..B., Шодиева N. Shodieva.U. Frequency of risk factors of overweight and obesity in young people/ . New Day in Medicine 1 (33) 2021. 61-65b.
7. Algorithms of specialized medical care for patients with diabetes mellitus / I. I. Dedov et al. Moscow, 2018, 112 p. (in Russian)
8. Dilnavoz A. R. Assessment of the expression of endothelial dysfunction in chronic heart failure in female patients //Assessment. – 2021. – Т. 44. – №. 05.
9. Адизова Д. Р. СУРУНКАЛИ ЮРАК ЕТИШМОВЧИЛИГИ МАВЖУД БЕМОРЛАРДА ДЕПРЕССИВ БУЗИЛИШЛАРНИНГ ТАРҚАЛИШИ //ЖУРНАЛ НЕВРОЛОГИИ И НЕЙРОХИРУРГИЧЕСКИХ ИССЛЕДОВАНИЙ. – 2022. – Т. 3. – №. 1.
10. Адизова Д. Р. и др. Положительное влияние торсида при хронической сердечной недостаточности у женщин с артериальной гипертензией //ПРОТИВОРЕЧИЯ СОВРЕМЕННОЙ КАРДИОЛОГИИ: СПОРНЫЕ И НЕРЕШЕННЫЕ ВОПРОСЫ. – 2015. – С. 164-165.

11. Saidova L. B. et al. Optimization of medical care for patients with acute poisoning at the prehospital stage by emergency medical care team //Of XY international Research and practice conference England, London. – 2019. – С. 120-122.
12. Saidova L. B. et al. Improving the quality of rendering assistance with acute poisons of psychopharmicological preparations according to the Bukhara center of emergency medical assistance in the toxicology division of XY international Research and practice conference England //PROSPECTS OF WORLD SCIENCE-2019. – 2019. – С. 127.
13. Saidova L. B. et al. Improving the quality of rendering assistance with acute poisons of psychopharmicological preparations according to the Bukhara center of emergency medical assistance in the toxicology division of XY international Research and practice conference England //PROSPECTS OF WORLD SCIENCE-2019. – 2019. – С. 127.
14. Rakhmatovna T. D. HELICOBACTER PYLORI IN CHILDREN WITH GASTRIC DYSPEPSIA SYNDROME //BARQARORLIK VA YETAKCHI TADQIQOTLAR ONLAYN ILMIY JURNALI. – 2022. – Т. 2. – №. 3. – С. 155-159.
15. Rakhmatovna T. D. CLINICAL AND EPIDEMIOLOGICAL ASPECTS OF THE COURSE OF ENTEROBIOSIS IN SCHOOL-AGE CHILDREN //BARQARORLIK VA YETAKCHI TADQIQOTLAR ONLAYN ILMIY JURNALI. – 2022. – С. 95-98.
16. Шарипова Л. Х., Орзиева М. С. Частота и клинические формы проявления зрительной патологии у детей Бухарской области //Биология и интегративная медицина. – 2018. – №. 3. – С. 91-102.
17. Miralievna B. M. Community-Acquired Pneumonia in Adults: Practical Recommendations for Diagnosis, Treatment and Prevention //Spanish Journal of Innovation and Integrity. – 2022. – Т. 6. – С. 119-125.
18. Khodzhaeva D. I. Changes in the Vertebral Column and Thoracic Spinecells after Postponement of Mastoectomy //International Journal of Innovative Analyses and Emerging Technology. – 2021. – Т. 1. – №. 4. – С. 109-113.
19. Ilkhomovna K. D. Modern Look of Facial Skin Cancer //Барқарорлик ва Етакчи Тадқиқотлар онлайн илмий журнали. – 2021. – Т. 1. – №. 1. – С. 85-89.
20. Ilkhomovna K. D. Morphological Features of Tumor in Different Treatment Options for Patients with Locally Advanced Breast Cancer //International Journal of Innovative Analyses and Emerging Technology. – 2021. – Т. 1. – №. 2. – С. 4-5.
21. Khodjayeva D. I. MORPHOLOGY OF IDIOPATHIC SCOLIOSIS BASED ON SEGMENT BY SEGMENT ASSESSMENT OF SPINAL COLUMN DEFORMITY //Scientific progress. – 2022. – Т. 3. – №. 1. – С. 208-215.

22. Ходжаева Д. И. СОВРЕМЕННЫЕ ВОЗМОЖНОСТИ УЛЬТРАЗВУКОВОЙ ДИАГНОСТИКИ ПРИ РАКЕ КОЖИ ЛИЦА //Жизнеобеспечение при критических состояниях. – 2019. – С. 111-112.
23. Aslonov S. G. et al. Modern Approaches to Oropharyngeal Cancer Therapy //International Journal of Discoveries and Innovations in Applied Sciences. – 2021. – Т. 1. – №. 3. – С. 38-39.
24. Khodjaeva D. I. MAGNETIC-RESONANCE IMAGING IN THE DIAGNOSIS OF BREAST CANCER AND ITS METASTASIS TO THE SPINAL COLUMN //Scientific progress. – 2021. – Т. 2. – №. 6. – С. 540-547.
25. Ilkhomovna K. D. MANIFESTATIONS OF POST-MASTECTOMY SYNDROME, PATHOLOGY OF THE BRACHIAL NEUROVASCULAR BUNDLE IN CLINICAL MANIFESTATIONS //Innovative Society: Problems, Analysis and Development Prospects. – 2022. – С. 225-229.
26. Sultonova N. A. Treatment of hypercoagulable conditions in women with misscarriage in early gestation //Asian Journal of Multidimensional Research (AJMR). – 2020. – Т. 9. – №. 12. – С. 13-16.
27. Султонова Н. А. ИНДИВИДУАЛЬНЫЙ ПОДХОД К ПРОГНОЗИРОВАНИИЮ САМОПРОИЗВОЛЬНЫХ ВЫКИДЫШЕЙ У ЖЕНЩИН ДО 24 НЕДЕЛЬ ГЕСТАЦИИ //Современные вызовы для медицинского образования и их решения. – 2021. – Т. 406.
28. Султонова Н. А., Негматуллаева М. Н. Значимость Применения Витамина И Минеральной Комплексной Терапии В Профилактике Невынашивания Беременности //CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES. – 2021. – С. 388-392
29. Kurbanovna S. I. Functioning of the Immune System in Children, After Surgical Correction of Congenital Heart Defects //European Journal of Life Safety and Stability (2660-9630). – 2021. – Т. 12. – С. 439-446.
30. Харибова Е. А., Тешаев Ш. Ж. Морфофункциональные особенности тканевой организации энтероэндокринных клеток в возрастном аспекте //Проблемы биологии и медицины. – 2020. – №. 2. – С. 168-173.
31. Харибова Е. А. Особенности морфологии нейрональных ансамблей в тройничном узле человека //Морфология. – 2011. – Т. 140. – №. 5. – С. 123-124.
32. Махмудов З. А., Нечай В. В., Харибова Е. А. Железисто-лимфоидные взаимоотношения в стенке илеоцекального перехода на разных этапах постнатального онтогенеза //Морфология. – 2008. – Т. 133. – №. 2. – С. 85.

33. Адизова Д. Р., Адизова С. Р., Иброхимова Д. Б. Место депрессивных расстройств у пациенток с хронической сердечной недостаточностью //Биология и интегративная медицина. – 2021. – №. 4 (51). – С. 79-90.
34. Адизова Д. Р., Джураева Н. О., Халилова Ф. А. ROLE OF DEPRESSION AS A RISK FACTOR IN THE COURSE OF CHRONIC HEART FAILURE //Новый день в медицине. – 2019. – №. 4. – С. 15-18.
35. Шарипова Л. Х., Орзиева М. С. Состояние функции внешнего дыхания и сердечно-сосудистой системы у здоровых и у детей с нарушениями зрения //Биология и интегративная медицина. – 2018. – №. 5. – С. 23-31.
36. Rakhmatovna T. D. Enterobiosis in Children Current Diagnostic Problems //European Multidisciplinary Journal of Modern Science. – 2022. – Т. 7. – С. 89-95.
37. Ibragimovna K. O. Competence of Quantitative Indicators of the Leading Clinical Signs of Cholestasis in Differentiation of its Grades //Indonesian Journal of Innovation Studies. – 2022. – Т. 18.