

Advantage of Treating Hypertension in a Patient with Diabetes Mellitus 2 Types, Obesity, Age Hypogonadism and Vitamin D Deficiency

Negmatova Gulzoda Shuhratovna

Head of the Department of Endocrinology, Samarkand State Medical University

Kurbanova Nozima Sabirjanovna

Assistant of the Department of Endocrinology, Samarkand State Medical University

Aktamov Sirojiddin, Raupov Bahodir

Student of medical course 412 group, Samarkand State Medical University

Keywords: diabetes mellitus, WHO, microvascular, macrovascular, insulin resistance, hypertension.

Relevance: The study of the effect of vitamin D deficiency on the human body is attracting increasing attention from scientists. According to numerous studies, vitamin D deficiency is registered in half of the world's population; among older people this figure reaches 80–90%. At the same time, vitamin D deficiency in men is most often detected in obesity, androgen deficiency, infertility and prostate diseases. Diabetes mellitus (DM) is a serious medical and social problem, which is due to its high prevalence, a continuing trend towards an increase in the number of patients, a chronic course that determines the cumulative nature of the disease, high disability of patients and the need to create a system of specialized care. In quantitative terms, type 2 diabetes makes up 85%–90% of the total number of patients suffering from this disease. As a rule, it develops in people over 40 years of age. Finally, more than 80% of these patients are overweight or obese. According to WHO experts, in 1989 there were 98.9 million patients worldwide with type 2 diabetes mellitus, in 2000 – 157.3 million patients. In 2010, according to forecasts, about 215 million people with type 2 diabetes will live on our planet. For a long time, there has been a misconception about type 2 diabetes that it is easier to treat than type 1 diabetes, that it is a “milder” form of diabetes, that there is no need to formulate more stringent treatment goals, that complications can not to arise, but to be inevitable, and, finally, that obesity is best ignored due to the impossibility of doing anything about it. At present, there is no doubt that we are talking about a severe and progressive disease associated with the development of microvascular and macrovascular complications and characterized by the presence of two fundamental pathophysiological defects: - insulin resistance; – impaired function of pancreatic b-cells. It should be noted that type 2 diabetes mellitus is a heterogeneous disease that develops as a result of a combination of congenital and acquired factors. In this regard, it is appropriate to cite the statement of Erol Cerasi (2000) - “...we are talking about such a heterogeneous disease that lovers of almost all theories and views can get satisfaction regarding the mechanisms of its development...” The last 10-15 years have been characterized by the publication of a whole There are a number of conflicting points of view regarding the role of pancreatic b-cell function

and insulin sensitivity at the level of peripheral tissues in the pathogenesis of this disease. In most cases, discussions took place more on a qualitative level, and attention was focused on which factor is most important in terms of the development of the disease and which phenomenon develops earlier. There have been attempts to “fit” the theory to the available drugs developed by one or another pharmaceutical company. Currently, a more balanced opinion has emerged about the possible mechanisms of development of type 2 diabetes mellitus. It is known that the regulation of glucose homeostasis depends on the feedback mechanism in the liver – peripheral tissues – pancreatic b-cells system.

Objective: To evaluate the effect of correction of vitamin D deficiency on the dynamics of blood pressure in a male patient with hypertension, type 2 diabetes mellitus, obesity, and vitamin D deficiency.

Materials and methods: Patient P., 52 years old, complained of headache pain, periodic dry mouth and frequent urination, weakness, fatigue, increased blood pressure to 160/100 mmHg.

Medical history: type 2 diabetes mellitus (DM) and hypertension (HB) for 5 years, age-related hypogonadism (AH) and vitamin D deficiency installed within the last 6 months. On examination, the patient was malnourished, height 184 cm, weight 139 kg, BMI 41 kg/m², FROM-130 cm. The thyroid gland is not palpable. In the heart: the sounds are muffled, the rhythm is correct, blood pressure is 160/100 mmHg, heart rate is 85 beats/min. Peripheral pulsation in the arteries of the feet is preserved. In addition to the general clinical examination, the patient was measured systolic and diastolic blood pressure (SBP) and (DBP), respectively, body mass index (BMI) was determined using Quetelet's formula, and waist circumference (WC) was measured. Carbohydrate metabolism was assessed by the glycotriad - glycemia on an empty stomach and 2 hours after meals, as well as by the level of glycated hemoglobin A1c. Fat metabolism analysis was carried out using lipid spectrum - TC, HDL, LDL, TG, CA. Hormonal testing included determination of follicle-stimulating and luteinizing hormones (FSH) and (LH), respectively, total testosterone (T), prolactin, thyroid-stimulating hormone (TSH). Vitamin D levels were determined.

For the treatment of diabetes, the patient was prescribed metformin long 1500 mg and vildagliptin 100 mg per day; for the treatment of hypertension - valsacor 80 mg and nevigolol 5 mg per day; For therapy for VH - low-dose testosterone 1% 50 mg per day and to correct vitamin D deficiency - cholecalceferol 10 drops per day.

Results: after 6 months of therapy, in addition to subjective improvement, disappearance of thirst and dry mouth, cessation of headaches, improved performance and general tone, the patient's clinical and metabolic parameters also improved significantly. The patient's weight decreased by 21% to 110 kg, BMI decreased by 20% to 33.3 kg/m², OT decreased by 16.9% and amounted to 108 cm. Blood pressure indicators reached target values - SBP and DBP decreased by 18.9 and 10%, respectively, and amounted to 130 and 85 mmHg. Significantly improved carbohydrate metabolism indicators - fasting glycemia decreased by 40% to 6.0 mmol/l, decreased to target values by 38 and 29% glycemia 2 hours after eating and HbA1c and were 6.7 mmol/l and 6.2%, respectively. During therapy, lipid metabolism indicators almost reached target values: total cholesterol decreased by 27.6% to 4.7 mmol/l, LDL decreased by 30.1% to 3.6 mmol/l, HDL increased by 10% to 1 mmol/l, TG decreased by 25.9% to 2 mmol/l. Analysis of hormonal status revealed a significant increase (5.6 times) to the target level of total testosterone - from 3 to 17 nmol/l. Prolactin, FSH, LH, TSH continued to remain within normative values.

Finally, vitamin D increased from 12 to 48 ng/ml (4 times) and reached the target level.

Conclusions: The administration of cholecalceferol contributes not only to the elimination vitamin deficiency, but also more effective correction of glycemia, blood pressure and weight in men with hypertension, type 2 diabetes mellitus, obesity and age-related hypogonadism.

References:

1. Sobirjonovna, Kurbonova Nozima. "Factors determining the clinical significance of depeptidyl peptidase 4 inhibitors in the treatment of patients with type 2 diabetes mellitus." *World Bulletin of Public Health* 8 (2022): 67-72.
2. Muratova N. Y., Khasanov I. I., Yusupov S. S. Применение ультразвуковой кавитации при лечении гнойных ран челюстно-лицевой области //Здобутки клінічної і експериментальної медицини. – №. 1.
3. Муратова Н. Ю., Абдуллаев Ш. Ю. Использование Гидроксипатита И Коллагена При Эндопротезировании Нижней Челюсти Титатовыми Имплантатами //Central asian journal of medical and natural sciences. – 2021. – Т. 2. – №. 6. – С. 32-38.
4. Karimova N.A., Kurbanova N.S. Disorders of physical development in adolescents and its complications // *Journal of Cardiorespiratory Research*. - 2021. - Vol. 2. - No. 2.
5. Karimova N.A., Kurbanova N.S. Disorders of physical development in adolescents and its complications // *Journal of Cardiorespiratory Research*. - 2021. - Vol. 2. - No. 2.
6. Sobirjonovna K. N. Factors determining the clinical significance of depeptidyl peptidase 4 inhibitors in the treatment of patients with type 2 diabetes mellitus //*World Bulletin of Public Health*. – 2022. – Т. 8. – С. 67-72.
7. Курбонова Н.С. Негматова Г.Ш. “Ортикча вазли қизларда хайз даврининг бузулиши”// *Тиббиётда янги кун*. 9(47) 287-291 бет. 2022
8. Курбонова Н.С. Негматова Г.Ш. "Эриктильная дисфункция у больных сахарным диабетом и ее клинический анализ"//*Биомедицина ва амалиёт* 5.1 сон. 160-165 бет. 2022 йил.
9. Курбонова Н.С. "Clinical manifestations and classification of lesions of the macular area in diabetes." *Eurasian scientific herald*. Vol13/2022/ 97-101стр.
10. Курбанова Нозима Сабиржановна “FACTORS DETERMINING THE CLINICAL SIGNIFICANCE OF DEPIPTIDYL PEPTIDASE 4 INHIBITORS IN THE TREATMENT OF PATIENTS WITH TYPE 2 DIABETES MELLITUS” *World Bulletin of Public Health (WBPH)*Volume-8, March 2022 67-72
11. Nazira K., Siddikovna T.G., Davranovna D.A., Takhirovich D.A., Tulkinovich O.S. (2021). Cardiovascular complications in patients with covid and diabetes mellitus 2. *Central Asian Medical and Natural Science Journal*, 2(3), 37-41.
12. GROWTH HORMONE FOR THE TREATMENT OF HEREDITARY DISEASES IN CHILDREN Ortikov Shahzod Tulkinovich. Karimova Nazira Alimovna, Kurbanova Nozima Sobirjanovna, Daminov Abdurasul Takhirovich / *International Journal of Innovative Engineering and Management Research*. 2021 281-284.
13. Features of the course of type 2 diabetes mellitus with arterial hypertension and ways of their correction Negmatova Gulzoda Shukhratovna, Salimova Dildora Erkinovna *Eurasian Medical Research Journal* 17, 39-41, 2023.
14. FEATURES OF THE TECHNIQUE OF TYPE 2 DIABETES MELLITUS IN COMBINATION WITH ARTERIAL HYPERTENSION AND WAYS OF CORRECTION IX G.Sh. Negmatova, D.E. Salimova LLC "Research and publications", Enlightener, 2023.
15. Features of the coexistence of type 2 diabetes mellitus with arterial hypertension and their treatment Gulzoda Shukhratovna Negmatova, Dildora Erkinovna Salimova LLC "Ochik fan", Science and education, 2023.
16. Khalimova Z.Yu. and G.Sh. Negmatova. Autoimmune polyglandular syndromes. Literature review". *Central Asian Journal of Medical and Natural S*
17. Даминов А., Хайдаров О., Хасанова М. и Абдукахорова Р. (2023). ОСЛОЖНЕНИЯ ГЛЮКОКОРТИКОИДНОЙ ТЕРАПИИ У ПАЦИЕНТОВ С ДИАБЕТОМ,

- ПЕРЕЖИВШИХ КОВИД-19. Евразийский журнал медицинских и медицинских наук , 3 (4), 197-200.ciences 2.4 (2021): 166-175.
18. Khamidova M.N., Ismatova I.F., Zh.Sh. Berdirov, G.Sh. Negmatova and A.T. Daminov. "DIABETES AND COVID-19". Eurasian Journal of Medicine and Natural Sciences 2, no. 13 (2022): 190-204.
 19. Takhirovich D.A., Burchaklar S.J.A., Shukhratovna N.G., Shukhratovna S.G., Zainuddinovna M.G. (2022). COURSE OF COVID-19 IN PATIENTS WITH DIABETES. Web of Scientist: International Journal of Scientific Research, 3(02), 73–76.
 20. Takhirovich D.A., Korners S.J.A., Shukhratovna N.G., Shukhratovna S.G., Zainuddinovna M.G. (2022). COURSE OF COVID-19 IN PATIENTS WITH DIABETES. Web of Scientist: International Journal of Scientific Research, 3(02), 73–76.
 21. Abduvali, X., Otabek, S., Asilbek, E., & Daminov, A. T. (2023). TYPE 2 DIABETES: TIME TO CHANGE THE CONCEPT. Science and innovation, 2(D4), 165-167.
 22. Togaeva G.S. «Ўз-узени назорат қилиш мактабида ўқиган қандли диабет 2 тип билан касалланган беморларнинг клиник ва биохимиявий курсаткичлари». Journal of Biomedicine and Practice 2 Special Issue. Tashkent in 2020. Pages 132-135.
 23. Togaeva Gulnora Siddikovna., Oripov Firdavs Suratovich., Davranova Aziza Davranovna.: "Structural features of cells of the islets of Langerhans in offspring with alloxonic diabetes" (Review article). Annals of the Romanian Society for Cell Biology 2021; P.158-162
 24. Negmatova G.Sh, Togayeva G.S., Davranova A.D., Azimbegova S.N. “Assessment of the effectiveness of cardioprotective drugs in treatment of children with diabetic cardiomyopathy”/ The American journal of medical sciences and pharmaceutical research//4.01. 79-83.
 25. Negmatova G.Sh., Togayeva G.S., Davranova A.D., Azimbegova S.N. Uzbek medical journal. // Criteria for physical and sexual development in with thyroid diseases. 4. 32.
 26. Negmatova G.Sh, Togayeva G.S., Davranova A.D., Azimbegova S.N. “Assessment of the effectiveness of cardioprotective drugs in treatment of children with diabetic cardiomyopathy”/ The American journal of medical sciences and pharmaceutical research//4.01. 79-83.
 27. Davranova A. (2022). QALQONSIMON BEZ PATOLOGIYASI BO’LGAN O’SMIR QIZLARDA HAYZ DAVRINING BUZILISHINI O’ZIGA XOSLIGI. Евразийский журнал медицинских и естественных наук, 2(8), 113–115.
 28. Karimova N.A. Davranova A.D. Features of menstrual irregularities in adolescent girls with thyroid pathology. Trends and prospects for the development of science and education in the context of globalization. Pereyaslav-Khmelnytsky. Ukraine. 27 version 2019. Release 46.537-540.
 29. Davranova A.D. Karimova N.A. Features of early diagnosis of congenital hypothyroidism in children. Problems of biology and medicine. International scientific journal. № 1.1 (108) 2019.
 30. Karimova N.A. Davranova A.D. Bakhronov S.D. Features of the pathology of the reproductive system in girls in the iododicitis region. P. 112-114. Re-health. Andijon 2020. Issue 4.
 31. Dzhuraeva Z.A. Negmatova G.Sh. The state of the cardiovascular system in patients with hypothyroidism. Use of highly innovative technologies in preventive medicine. Republican scientific-practical conference. Andijon 2020.
 32. Z.Y Xalimova G.Sh. Negmatova - "Аутоиммунные Полигландулярные Синдромы. Обзор Литературы”. Central Asian Journal of Medical and Natural Science, 2021