

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

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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.

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