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## МОДИФИКАЦИЯ САХАРОСНИЖАЮЩЕЙ ТЕРАПИИ КАК ФАКТОР УЛУЧШЕНИЯ КАЧЕСТВА ЖИЗНИ ПОЖИЛЫХ ПАЦИЕНТОВ С САХАРНЫМ ДИАБЕТОМ 2 ТИПА

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### АННОТАЦИЯ

**Актуальность.** Сахарный диабет 2 типа (СД2) широко распространен среди пожилых людей и вызывает серьезные макро- и микрососудистые осложнения. Особенностью течения СД2 у пожилых пациентов является повышенный риск развития гериатрических синдромов и гипогликемических состояний, что приводит к значительному снижению качества их жизни. **Целью** нашей работы было изучение качества жизни пожилых пациентов с сахарным диабетом 2 типа и влияния на него сахароснижающей терапии.

**Материалы и методы исследования.** Мы провели проспективное рандомизированное исследование, в котором приняли участие 2 группы пожилых женщин. Первую группу составили 40 пациентов с сахарным диабетом 2 типа (средний возраст  $68,25 \pm 4,12$  года), получавших традиционную сахароснижающую терапию, вторую группу составили 40 пациентов с сахарным диабетом 2 типа (средний возраст  $68,35 \pm 3,89$  года). на основе разработанного нами метода лечения: стол №9, гликлазид внутривенно, метформин, сублет, холекальциферол в каплях (насыщающая доза в течение месяца, далееподдерживающие), физическая активность. У пожилых пациентов с сахарным диабетом 2 типа наблюдается снижение качества жизни, связанного со здоровьем. **Выводы:** Модификация сахароснижающей терапии путем добавления холекальциферола и метформин к обычной схеме лечения способствовала улучшению качества жизни этой категории пациентов. Этот метод лечения безопасен, имеет низкий риск развития гипогликемии и помогает снизить массу тела пациентов.

**Ключевые слова:** сахарный диабет 2 типа, качество жизни, гипогликемия, холикальциферол, метформин

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# MODIFICATION OF ANTI-GLYCEROUS THERAPY AS A FACTOR IN IMPROVING THE QUALITY OF LIFE IN ELDERLY PATIENTS WITH TYPE 2 DIABETES

## ANNOTATION

**Relevance.** Type 2 diabetes mellitus (T2DM) is widespread among elderly people and causes serious macro- and microvascular complications. A characteristic feature of T2DM in elderly patients is an increased risk of developing geriatric syndromes and hypoglycemic conditions, which leads to a significant decrease in their quality of life. The aim of our study was to examine the quality of life of elderly patients with type 2 diabetes mellitus and the impact of glucose-lowering therapy on it.

**Materials and methods.** We conducted a prospective randomized study involving 2 groups of elderly women. The first group consisted of 40 patients with T2DM (mean age  $68.25 \pm 4.12$  years) receiving traditional glucose-lowering therapy. The second group consisted of 40 patients with T2DM (mean age  $68.35 \pm 3.89$  years) treated with our developed method: diet #9, intravenous gliclazide, metformin, sublet, cholecalciferol drops (loading dose for a month, then maintenance dose), and physical activity. Elderly patients with T2DM experience a decrease in health-related quality of life. **Conclusions:** Modification of glucose-lowering therapy by adding cholecalciferol and metformin to the usual treatment regimen contributed to improving the quality of life in this category of patients. This treatment method is safe, has a low risk of hypoglycemia, and helps reduce patients' body weight.

**Key words:** type 2 diabetes mellitus, quality of life, hypoglycemia, cholecalciferol, metformin

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# МОДИФИКАЦИЯ САХАРОСНИЖАЮЩЕЙ ТЕРАПИИ КАК ФАКТОР УЛУЧШЕНИЯ КАЧЕСТВА ЖИЗНИ ПОЖИЛЫХ ПАЦИЕНТОВ С САХАРНЫМ ДИАБЕТОМ 2 ТИПА

## ANNOTATSIYA

**Dolzarbli.** 2-tur qandli diabet (QD2) keksalar orasida keng tarqalgan bo'lib, jiddiy makro va mikrotomir asoratlari keltirib chiqaradi. Kexsa bemorlarda QD2 kechishining o'ziga xos xususiyati geriatrik sindromlar va gipoglikemik holatlar rivojlanish xavfining yuqoriligi hisoblanadi, bu esa ularning hayot sifatining sezilarli darajada pasayishiga olib keladi. Bizning ishimizning maqsadi 2-tur qandli diabet bilan og'rigan keksa bemorlarning hayot sifatini va unga qand pasaytiruvchi terapiyaning ta'sirini o'rganishdan iborat edi. **Tadqiqot materiallari va usullari.** Biz prospektiv randomizatsiyalangan tadqiqot o'tkazdik, unda keksa ayollarning 2 guruhi ishtirok etdi. Birinchi guruhi 2-tur qandli diabet bilan og'rigan 40 nafar (o'rtacha yoshi  $68,25 \pm 4,12$  yosh) an'anaviy qand pasaytiruvchi terapiya olgan bemorlar tashkil etdi. Ikkinchi guruhi 2-tur qandli diabet bilan og'rigan 40 nafar (o'rtacha yoshi  $68,35 \pm 3,89$  yosh) biz ishlab chiqqan davolash usuli asosida terapiya olgan bemorlar tashkil etdi: 9-stol, gliklazidin venaga, metformin, sublet, xolekalsiferol tomchilar (bir oy davomida to'yintiruvchi doza, keyin qo'llab-quvvatlovchi), jismoniy faollik. 2-tur qandli diabet bilan og'rigan keksa bemorlarda salomatlik bilan bog'liq hayot sifatining pasayishi kuzatiladi. **Xulosalar:** Odatiy davolash sxemasiga xolekalsiferol va metforminni qo'shish orqali qand miqdorini pasaytiruvchi terapiyani o'zgartirish ushbu toifadagi bemorlarning hayot sifatini yaxshilashga yordam berdi. Ushbu davolash usuli xavfsiz bo'lib, gipoglikemiya rivojlanish xavfi past va bemorlarning tana vaznini kamaytirishga yordam beradi.

**Kalit so'zlar:** 2-tip qandli diabet, hayot sifati, gipoglikemiya, xolekalsiferol, metformin.

**Relevance.** Type 2 diabetes mellitus (DM2) is widespread among the elderly and causes serious macrovascular and microvascular complications. A feature of the course of DM2 in elderly patients is an increased risk of developing geriatric syndromes and hypoglycemic conditions, which leads to a significant decrease in their quality of life.

The aim of the study was to study the quality of life of elderly women with type 2 diabetes mellitus (T2DM) and to evaluate the effect of modified hypoglycemic therapy on this indicator.

**Materials and methods:** 120 elderly women were included in the study, divided into three groups. Main group 1 (n=40) received traditional hypoglycemic therapy, including diet, intravenous gliclazide, metformin, and recommended physical activity. The main group 2 (n=40) received the treatment regimen we developed, which, in addition to the above components, included metformin and cholecalciferol in drops (a saturating dose for a month followed by a maintenance dose). The control group (n=40) consisted of women without impaired

carbohydrate metabolism. Complaints, medical history, and anthropometric parameters were examined in all participants. The quality of life was assessed using the SF-36 questionnaire. The groups were monitored for 6 months.

**Results:** After 6 months of follow-up in group 2 (modified therapy), there was a statistically significant improvement in all indicators of quality of life according to the SF-36 questionnaire, with the exception of the BP scale (pain intensity), compared with the baseline data ( $p < 0.001$ ). The values of most quality of life indicators in group 2 were significantly higher than in group 1 (traditional therapy) ( $p < 0.001$ ). In group 1, 9 patients (22.5%) had episodes of hypoglycemia for 6 months, and 38 (95%) had an increase in body weight. 35 patients (87.5%) from this group noted decreased performance, weakness and apathy. No episodes of hypoglycemia were recorded in group 2. The average body mass index in group 2 significantly decreased to  $32.07 \pm 3.27$  kg/m<sup>2</sup> ( $p < 0.001$ ).

**Conclusions:** The addition of cholecalciferol and metformin to traditional hypoglycemic therapy significantly improved the quality of life of patients with type 2 diabetes. The modified therapy regimen has demonstrated good tolerability.

**Keywords:** type 2 diabetes mellitus, quality of life, hypoglycemia, cholecalciferol, metformin

## INTRODUCTION

Type 2 diabetes mellitus (DM2) is one of the most common chronic pathologies and a serious problem in geriatric practice. According to the Registry, there are more than 4.5 million patients with type 2 diabetes in Russia, a significant part of whom are elderly people. Experts attribute this to an increase in life expectancy and the general aging of the population. The primary incidence of T2DM reaches a peak in the age group of 65-79 years. An important problem is the high mortality rate of elderly patients with type 2 diabetes mellitus: about 60% of all deaths related to diabetes occur in people aged 60-99 years. The clinical features of T2DM in elderly patients are determined by a number of pathophysiological factors. First, the burden of concomitant chronic diseases increases with age, and the processes of systemic inflammation, oxidative stress, DNA damage, decreased mitochondrial function, cell aging, and tissue dysfunction become more active. Type 2 diabetes leads to various micro- and macrovascular complications, which in turn contribute to disability and increase mortality in patients. In addition, elderly patients with type 2 diabetes have a higher risk of developing many geriatric syndromes (from cognitive impairment to urinary incontinence), which causes difficulties in managing such patients. The problem of hypoglycemic conditions is also relevant for geriatric patients. Frequent hypoglycemia can also contribute to a decrease in the quality of life of patients, affecting, among other things, the cognitive functions of the brain. Hypoglycemia, which occurs with an overdose of sugar-lowering drugs, is one of the most important factors contributing to a decrease in attention and speed of psychomotor processes. Type 2 diabetes leads to various micro- and macrovascular complications, which, in turn, contribute to disability and increased mortality of patients. In addition, elderly patients with type 2 diabetes have a higher risk of developing many geriatric syndromes (from cognitive impairment to urinary incontinence). The problem of hypoglycemic conditions is also relevant for elderly patients. Frequent hypoglycemia can also contribute to a decrease in the quality of life of patients, affecting, among other things, the cognitive functions of the brain. Hypoglycemia that occurs when

An overdose of sugar-lowering drugs is one of the most important factors contributing to a decrease in attention and speed of psychomotor processes. As is known, in a hypoglycemic state, brain cells are deprived of essential nutrients, and the presence of episodes of severe hypoglycemia that required hospitalization or emergency treatment significantly increases the risk of developing dementia: with a single episode - by 1.4 times, with multiple episodes - by 2.4 times.

The purpose of our work was to study the quality of life of elderly patients with type 2 diabetes mellitus and the effect of hypoglycemic therapy on it.

## MATERIALS AND METHODS OF RESEARCH

We conducted a prospective randomized trial involving 2 groups of elderly women. The first group consisted of

40 patients with type 2 diabetes mellitus (average age  $68.25 \pm 4.12$  years) who received traditional hypoglycemic therapy, the second group consisted of 40 patients with type 2 diabetes

mellitus (average age  $68.35 \pm 3.89$  years). based on the treatment method we developed: table No. 9, gliclazide intravenously, metformin, sublet, cholecalciferol in drops (saturating dose for a month, further

supportive), physical activity. The control group consisted of 40 women without impaired carbohydrate metabolism, whose average age was  $68.65 \pm 4.06$  years. For the first time, our method of treating elderly patients with T2DM was confirmed by a patent for an invention. Criteria for inclusion in the study: patients aged 60-74 years with type 2 diabetes on hypoglycemic therapy in the form of: table No. 9, gliclazide MV, metformin, physical activity, outpatient treatment; signed informed consent. Exclusion criteria: mental illness, including dementia; unstable angina pectoris, decompensation of heart failure in less than a year after the announcement of the inclusion of patients in the study; chronological average statistics III, IV functional class still; category III, IV functional class; myocardial infarction or coronary reperfusion procedure less than 3 years ago; stroke or transient ischemic attack in the anamnesis; life expectancy less than 1 year; glomerular filtration rate  $< 30 \text{ ml/min/1.73 m}^2$ ; determination by the researcher of the impossibility of including the patient in this study.

The following patient data were studied: complaints, medical history, age of menopause, anthropometric parameters (height, weight), body mass index (BMI), calculated using the formula:  $\text{BMI} = \text{weight (kg)} / \text{height(m)}^2$ . The SF-36 questionnaire was used to assess the quality of life.

## THE RESULTS AND THEIR DISCUSSION

At the time of inclusion in the study, there were no statistically significant differences in anthropometric indicators in the groups of patients with DM2. The body mass index (BMI) in group 1 was  $33.39 \pm 4.02 \text{ kg/m}^2$ , in group 2 -  $33.06 \pm 3.17 \text{ kg/m}^2$  ( $p=1000$ ), which corresponds to grade I obesity according to generally accepted criteria. In the control group, the average BMI also corresponded to grade I obesity ( $30.66 \pm 3.93 \text{ kg/m}^2$ ), but was statistically significantly lower than in groups 1 and 2 ( $p=0.006$  and  $p=0.020$ , respectively). The initial values of the quality of life indicators assessed using the SF-36 questionnaire are shown in Table 1. At the time of inclusion in the study, there were no statistically significant differences between groups 1 and 2 on all scales of the SF-36 questionnaire ( $p>0.05$ ). When compared with the control group in group 2, the PF (physical functioning) index was statistically significantly lower ( $p=0.029$ ), and the vitality index (VT) was statistically significantly higher ( $p=0.002$ ). In group 1 (traditional therapy), a negative correlation was found between the indicator of role functioning due to emotional state (RE) and body mass index (BMI) ( $r=-0.3316$ ,  $p=0.037$ ), which indicates a link between a higher BMI and a decrease in role functioning due to an emotional state (RE). In group 2 (modified therapy), a direct correlation was found between the index of physical functioning (PF) and the index of physical condition-related role functioning (RP) with the age of menopause ( $r=0.5042$ ,  $p=0.001$  and  $r=0.4435$ ,  $p=0.004$ , respectively). Thus, a later age of menopause is associated with better indicators of physical and role functioning due to physical condition. The findings suggest that obesity and early menopause can negatively affect the quality of life of patients with type 2 diabetes mellitus. After 6 months of follow-up with modified DM2 therapy, group 2 showed a statistically significant increase in most indicators of quality of life according to the SF-36 questionnaire ( $p<0.001$ ), with the exception of blood pressure (pain intensity). The values of the following quality of life

indicators in group 2 were statistically significantly higher than in group 1: physical functioning (PF) ( $p<0.001$ ), general health (GH) ( $p<0.001$ ), vitality (VT) ( $p<0.001$ ), social functioning (SF) ( $p=0.004$ ), emotional state-related role functioning (RE) ( $p<0.001$ ), mental health (MN) ( $p<0.001$ ), and physical state-related role functioning (RP) ( $p=0.001$ ).

Vitamin D regulates the activity of various important human genes

(more than 1,000 genes localized on different chromosomes, which accounts for about 3% of the entire human genome), the dysfunction of which is naturally accompanied by low life expectancy and quality of life, as well as accelerated human aging. There is evidence of the effect of vitamin D on carbohydrate metabolism and insulin sensitivity. In this regard, it can be assumed that the use and normalization of its level contribute to improving the quality of life of patients. The results of our work are consistent. Based on data from Mathews NE and co-authors (2021), the authors investigated the effect of vitamin D supplementation in 290 postmenopausal women on quality of life. As a result, there was a significant improvement in their overall health. On the other hand, the data from the Hoffmann MR. review and co-authors. (2015) showed that vitamin D supplements can have a minor or moderate effect on quality of life with short-term use. However, there is evidence of a positive effect of long-term vitamin D intake on quality of life. There are currently no health-related problems. Thus, further study of this issue is required. Sublette contains affinity-purified antibodies to the C-terminal fragment of the  $\beta$ -subunit of the insulin receptor, which determines its main effect - increased sensitivity to insulin. In our study, the use of Sublette in combination therapy demonstrated good tolerability and a low risk of hypoglycemic conditions. This fact is consistent with the results of the All-Russian Noninvasive Observational Program to evaluate the

efficacy and safety of Sublette as part of the complex therapy of DM2 in outpatient patients (VITA). According to this program, 115 episodes of hypoglycemia were recorded in 100 patients during the entire follow-up period, while severe hypoglycemia accounted for only 0.9% of the total number of episodes. Most of the patients were satisfied with the therapy performed. In addition, according to N.V. Rogovoy and A.Yu. Riazanova (2019), the use of metformin in patients with DM2 was accompanied by a statistically significant decrease in body weight. Similar changes were noted in our study. A decrease in BMI is especially important for elderly patients, since obesity is a significant risk factor for developing senile asthenia, and is also associated with a worse prognosis. It is known that insulin resistance, characteristic of obesity and type 2 diabetes mellitus, contributes to the development of sarcopenia caused by impaired vascular function. Vascular aging is based on shortening of telomere length caused by insulin resistance. In patients with insulin resistance, telomerase activity is reduced compared to patients with normal insulin sensitivity. In addition, insulin resistance contributes to the deterioration of the morphofunctional state of the main arteries and increased atherosclerosis. Thus, the reduction in body weight and improvement in insulin sensitivity observed with the use of metformin may help reduce the risk of sarcopenia and atherosclerosis progression in elderly patients.

## CONCLUSIONS

Elderly patients with type 2 diabetes mellitus have a decrease in their health-related quality of life. Modification of hypoglycemic therapy by adding cholecalciferol and metformin to the usual treatment regimen contributed to an improvement in the quality of life of this category of patients. This treatment method is safe, has a low risk of hypoglycemia and helps to reduce the body weight of patients.

## Список литературы/References/Iqtiboslar:

1. Yarmukhamedova, S. K., Alisherovna, K. M., Tashtemirovna, E. M. M., & Nizamitdinovich, K. S. (2023). The Effectiveness of Trimetazidine in Arrhythmias. *Miasto Przyszłości*, 33, 215-221.
2. Yarmukhamedova, S. K., Normatov, M. B., & Amirova, S. A. (2021). Modification of structural and functional indicators of the heart in diabetes mellitus patients with diastolic heart failure. *Journal of Advanced Medical and Dental Sciences Research*, 9(5), 1-4.
3. Nizamitdinovich, K. S., Khabibovna, Y. S., Alisherovna, K. M., & Tashtemirovna, E. M. M. (2023). Spinal Injury for Rheumatoid Arthritis. *Miasto Przyszłości*, 40, 426-432.
4. Tashtemirovna, E. M. M., Khabibovna, Y. S., Alisherovna, K. M., & Erkinovna, K. Z. (2023). Angiopathy in Rheumatoid Arthritis. *Miasto Przyszłości*, 40, 418-425.
5. Khabibovna, Y. S., Alisherovna, K. M., Erkinovna, K. Z., & Djamshedovna, K. D. (2023). Gender Characteristics of the Course of Rheumatoid Arthritis. *Miasto Przyszłości*, 40, 438-442.
6. Khabibovna, Y. S., & Buribaevich, N. M. (2020). Study Of Parameters Of Central Hemodynamics In Patients With Chronic Glomerulonephritis. *Достижения науки и образования*, (13 (67)), 57-59.
7. Habibovna, Y. S., & Bo'Riboyevich, N. M. (2020). Surunkali Glomerulonefrit Bilan Og 'Rigan Bemorlarda Arterial Qon Bosimining Sutkalik Monitoring Ko 'Rsatkichlarini Baxolash. *Journal of cardiorespiratory research*, 1(1), 103-108.
8. Khabibovna, Y. S., & Abdudukirovna, A. S. (2021). Changes in the diastolic function of the right ventricle in arterial hypertension.
9. Yarmuxamedova, S. X., & Normatov, M. B. R. (2021). SURUNKALI GLOMERULONEFRIT BILAN OG'RIGAN BEMORLARD MARKAZIY GEMODINAMIKA KO'RSATKICHLARINI BAHOLASH. *Scientific progress*, 2(2), 696-699.
10. Yarmuxamedova, S. X., & Normatov, M. B. R. (2021). SURUNKALI GLOMERULONEFRIT BILAN KASALLANGAN BEMORLARD SUTKALIK QON BOSIMINING XARAKTERISTIKASI. *Scientific progress*, 2(2), 706-710.