

ЛЕЧЕНИЯ УРОГЕНИТАЛЬНОЙ ФОРМЫ ДИАБЕТИЧЕСКОЙ АВТОНОМНОЙ НЕЙРОПАТИИ У БОЛЬНЫХ САХАРНЫМ ДИАБЕТОМ ТИПА 2

О.А.Ахунбаев.

Ферганский медицинский институт общественного здоровья. г.Фергана, Узбекистан.

Для цитирования: © Ахунбаев О.А.

ЛЕЧЕНИЯ УРОГЕНИТАЛЬНОЙ ФОРМЫ ДИАБЕТИЧЕСКОЙ АВТОНОМНОЙ НЕЙРОПАТИИ У БОЛЬНЫХ САХАРНЫМ ДИАБЕТОМ ТИПА 2
ЖКМП.-2025.-Т.2.-№2.-С

Поступила: 17.04.2025

Одобрена: 06.05.2025

Принята к печати: 05.06.2025

Аннотация: Сахарный диабет (СД) распространен во всех странах мира. По данным Всемирной Организации Здравоохранения в настоящее время на планете насчитывается около 422 млн. больных диабетом, и их число прогрессивно растет. Хорошо известно, что СД опасен прежде всего своими отдаленными осложнениями, такими как нефропатия, ретинопатия, нейропатия, сердечнососудистые заболевания и другие. Диабетическая нейропатия, одинокого часто встречается при обоих типах СД. Частота ее развития увеличивается с возрастом и длительности СД. Диабетическая автономная нейропатия (ДАН) урогенитальная форма является одной из форм автономной невропатии, основным проявлением которой является эректильная дисфункция (ЭД). Целью нашего исследования явилось изучение особенности и степени тяжести клинических проявлений ЭД в зависимости от компенсации и длительности заболевания.

Ключевые слова: сахарный диабет, диабетическая автономная нейропатия, эректильная дисфункция, лечения.

QANDLI DIABET 2 TUR BILAN OG'RIGAN BEMORLARDA DIABETIK VEGETATIV NEYROPATIYANING UROGENITAL SHAKLINI TASHXISLASH VA DAVOLASH

О.А.Ахунбаев.

Фарғона жамоат саломатлиги тиббиёт институти. Фарғона ш., О'збекистон.

Izoh: © Axunbayev O.A.

QANDLI DIABET 2 TUR BILAN OG'RIGAN BEMORLARDA DIABETIK VEGETATIV NEYROPATIYANING UROGENITAL SHAKLINI TASHXISLASH VA DAVOLASH. KPTJ.-2025-N.2.-№2-M

Qabul qilindi: 17.04.2025

Ko'rib chiqildi: 06.05.2025

Nashrga tayyorlandi: 05.06.2025

Annotatsiya: Qandli diabet (QD) dunyoning barcha mamlakatlarida keng tarqalgan. Jahon sog'liqni saqlash tashkiloti ma'lumotlariga ko'ra, hozirda sayyoramizda qandli diabet bilan og'rigan 422 millionga yaqin odam bor va ularning soni tobora ortib bormoqda. Ma'lumki, qandli diabet (QD), birinchi navbatda, uning uzoq muddatli asoratlari, masalan, nefropatiya, retinopatiya, neyropatiya, yurak-qon tomir kasalliklari va boshqalar tufayli xavflidir. Diabetik neyropatiya diabetning (DND) ikkala turida ham keng tarqalgan. Uning rivojlanish chastotasi diabetning yoshi va davomiyligi bilan ortadi. Diabetik vegetativ neyropatiya urogenital shakli avtonom (vegetativ) neyropatiya shakllaridan biri bo'lib, uning asosiy ko'rinishi erektil disfunktsiya (ED). Tadqiqotimizning maqsadi kasallikning kompensatsiyasi va davomiyligiga qarab erektil disfunktsiyaning (ED) klinik ko'rinishlarining xususiyatlari va oqibatlarini o'rganish.

Kalit so'zlar: qandli diabet, diabetik vegetativ neyropatiya, erektil disfunktsiya, davolash.

TREATMENT OF UROGENITAL FORM OF DIABETIC AUTONOMIC NEUROPATHY IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

Akhunbaev O.A.

Fergana Medical Institute of Public Health. Fergana., Uzbekistan.

For situation: © Akhunbaev O.A.

TREATMENT OF UROGENITAL FORM OF DIABETIC AUTONOMIC NEUROPATHY IN PATIENTS WITH TYPE 2 DIABETES MELLITUS.
JCPM.-2025.P.2.№2-A

Received: 17.04.2025

Revised: 06.05.2025

Accepted: 05.06.2025

Abstract: Diabetes mellitus (DM) is common in all countries of the world. According to the World Health Organization, there are currently about 422 million people with diabetes on the planet, and their number is growing progressively. It is well known that DM is dangerous primarily for its long-term complications, such as nephropathy, retinopathy, neuropathy, cardiovascular diseases and others. Diabetic neuropathy, alone, is often found in both types of DM. The frequency of its development increases with age and duration of DM. Diabetic autonomic neuropathy (DAN) urogenital form is one of the forms of autonomic neuropathy, the main manifestation of which is erectile dysfunction (ED). The purpose of our study was to study the features and severity of clinical manifestations of (ED) depending on compensation and duration of the disease.

Keywords: diabetes mellitus, diabetic autonomic neuropathy, erectile dysfunction, treatment.

Introduction: Diabetes mellitus (DM) is common in all countries of the world. According to the World Health Organization, there are currently about 422 million people with diabetes on the planet, and their number is growing rapidly [1,2]. It is well known that DM is dangerous primarily because of its long-term complications, such as nephropathy, retinopathy, neuropathy, cardiovascular diseases, and others. Diabetic neuropathy, alone, is often found in both types of DM. Its frequency of development increases with age and duration of DM. The prevalence of autonomic and sensorimotor neuropathies alone [3,4]. Diabetic autonomic neuropathy (DAN) urogenital form is one of the forms of autonomic (vegetative) neuropathy, the main manifestation of which is erectile dysfunction (ED) [5]. ED occurs in 50-60% of men suffering from DM [6,7]; The risk of developing ED in diabetes mellitus is 3 times higher than in the healthy population [7,8]. ED can be the first symptom of diabetes mellitus. Still, in more than 50% of patients with diabetes, it occurs within the first 10 years of the disease and is often the first manifestation of neuropathy or macroangiopathy [8]. Recently, more and more studies have appeared showing that ED can be an early indirect sign of the onset and progression of atherosclerosis in diabetes mellitus [9], which demonstrates the importance of early diagnosis of ED for identifying risk groups and improving preventive measures to prevent the development of late complications, such as diabetic foot syndrome and severe macroangiopathy.

In addition, several studies have revealed a relationship between the development of ED and the degree of long-term compensation of diabetes mellitus (glycated hemoglobin levels), the presence of late complications, concomitant diseases, and the therapy being carried out. In patients with diabetes and concomitant arterial hypertension, ED occurs in more than 80% of cases [10]. Since the etiology of ED in diabetes mellitus is multifactorial (hypogonadism, neuropathy, vascular disorders, decompensation of diabetes, psychogenic factors, the influence of drugs used to treat complications of diabetes), accurate diagnosis of the form of ED and the degree of contribution of each of these factors will improve the qualitative effect of the therapy and, as a result, improve the quality of life of patients with diabetes.

Materials and methods: The study involved 30 men with type 2 diabetes. The control group consisted of 7 practically healthy people. The exclusion criteria

were the absence of benign prostatic hyperplasia (BPH) in patients. All patients underwent conventional general clinical and biochemical studies. The state of diabetes compensation was assessed by the content of glycated hemoglobin (HbA1C). The level of glycemia was determined by the glucose oxidase method on an empty stomach and 2 hours after breakfast. The severity of erectile dysfunction was determined by questionnaires using the International Index of Erectile Function - 5 (IIEF-5). EF was determined using the IIEF-5 questionnaire, which allows for assessing five components of sexual function (erection, orgasm, sexual desire, satisfaction from sexual intercourse, and general sexual satisfaction). The questionnaire consists of five questions, each offering five answer options. Based on the answers to the questions, the total number of points is summed up, which allows us to determine the norm (21–25 points) and different degrees of erectile dysfunction (16–20 points – mild, 11–15 points – moderately mild, 5–10 points – severe).

Appendix 1. International Index of Erectile Dysfunction (IIEF).

	Almost never or never	Rarely (less than half the time)	Sometimes (about half the time)	Often (more than half of the cases)	Almost always or always
1. How often have you had an erection during sexual activity recently?	1	2	3	4	5
2. How often recently have you had an erection that was sufficient for insertion of the penis (for the beginning of sexual intercourse)?	1	2	3	4	5
3. When attempting sexual intercourse, how often were you able to insert the penis (start sexual intercourse)?	1	2	3	4	5
4. How often have you recently been able to maintain an erection after the start of sexual intercourse?	1	2	3	4	5
5. How difficult was it to maintain an erection during and until the end of intercourse?	1 extremely difficult	2 very difficult	3 difficult	4 not very difficult	5 not difficult

Results: HbA1c content in patients with type 2 diabetes exceeded the control values by 55.5% relative to the control. Similar changes were observed in fasting and 2-hour postprandial glycemia values, which increased by 54.5 and 55%, respectively, indicating diabetes decompensation. Among the examined patients with type 2 diabetes, the presence of ED was detected in 100% of patients as a result of questioning using the IIEF-5 questionnaires. Among them, ED was not detected in 6 patients.

At the same time, mild erectile dysfunction was detected in 30% (10 patients) – 17.4 ± 2.3 points, moderate ED in 54% (18 patients) – 12.2 ± 1.3 points. Severe ED was detected in 2 patients, with an average score of 8.4 ± 1.13 points (this constituted 6% of the total number of those examined with sexual dysfunction), (Table 1).

Table 1. Carbohydrate metabolism parameters in patients with type 2 diabetes upon admission ($M \pm m$).

Tests	Control, n=7	Upon admission, n=30
HbA1c %	4.5 ± 1.02	$10.13 \pm 0.8^*$
Fasting glycemia, mmol/l	4.6 ± 0.8	$10.1 \pm 0.35^*$
Postprandial glycemia, mmol/l	5.9 ± 0.3	$13.1 \pm 0.6^*$

Note: n – number of patients examined * – presence of reliability ($P < 0.05$) compared to control.

In patients with a severe form of the disease, a more reliable decrease in erectile function was found to 7.5 ± 1.13 points (by 73%), while in patients with moderate severity, this indicator was reduced by 54%, (Table 2).

Table 2. ED indicators in patients with type 2 diabetes depending on the severity of the disease.

Indicator	control n=7	moderate severity form n=21	severe form n=9
IIEF-5, in points	24 ± 2.24	$11.2 \pm 2.3^*$	$7.5 \pm 1.13^*$

The study of EF depending on the duration of the disease showed that the longer the duration of diabetes, the more pronounced the ED. Thus, in the group of patients with a duration of diabetes of up to 5 years, a reliable decrease in EF by 34% is noted, and with a duration of the disease from 5 to 10 years by 56%. In the group of more than 10 years, this indicator was significantly lower in relation to the control and amounted to 6.8 ± 0.3 points, (Table 3).

Table 3. ED indicators in patients with type 2 diabetes depending on the duration of the disease.

Indicator	Control n=7	Duration of DM, years		
		0-5 years n=8	5-10 years n=18	More than 10 years n=4
IIEF-5, in points	24 ± 2.24	$18.4 \pm 2.3^*$	$11.5 \pm 1.1^*$	6.8 ± 0.3

Conclusion:

Erectile dysfunction occurs in men with type 2 diabetes mellitus aged 55-59 years. According to the IIEF-5 questionnaire, 54% of patients with type 2 diabetes mellitus are diagnosed with moderate erectile dysfunction. The severity of erectile dysfunction is associated with the severity and duration of diabetes.

REFERENCES:

1. Kayumov, J. (2024). Diagnosis and treatment of urogenital form of diabetic autonomic neuropathy in patients with type 2 diabetes mellitus. *Science and Innovation*, 3(D9), 98–102.
2. International Diabetes Federation. (n.d.). *IDF Diabetes Atlas Reports*. <https://diabetesatlas.org/atlas-reports/>
3. Kim, J.-D. (2023). Diabetes and sexual dysfunction. *The Journal of Korean Diabetes*, 24(1), 18–23. <https://doi.org/10.4093/jkd.2023.24.1.18>
4. Husáková, J., Sochorová, K., Fejfarová, V., & Dubský, M. (2022). Detection, examination and therapy of sexual dysfunctions in patients with diabetes. *Vnitřní lékařství*, 68(3), E18–E21. <https://doi.org/10.36290/vnl.2022.042>
5. Moreira, E. D. Jr., Lbo, C. F., Diamant, A., Nicolosi, A., & Glasser, D. B. (2003). Incidence of erectile dysfunction in men 40 to 69 years old: Results from a population-based cohort study in Brazil. *Urology*, 61(2), 431–436.
6. Rosen, R. C., Riley, A., Wagner, G., Osterloh, I. H., Kirkpatrick, J., & Mishra, A. (1997). The international index of erectile function (IIEF): A multidimensional scale for assessment of erectile dysfunction. *Urology*, 49(6), 822–830.
7. Malavige, L. S., & Levy, J. C. (2009). Erectile dysfunction in diabetes mellitus. *Journal of Sexual Medicine*, 6, 1232–1247.
8. Kayumov, J. (2024). Healthcare system and current treatment of type 2 diabetes in Uzbekistan. *Journal of Clinical and Preventive Medicine*, 2024(2), 55–58.
9. Kamenov, Z. A. (2015). A comprehensive review of erectile dysfunction in men with diabetes. *Experimental and Clinical Endocrinology & Diabetes*, 123(3), 141–158.
10. Giuliano, F. A., Leriche, A., Jaudinot, E. O., & De Gendre, A. S. (2004). Prevalence of erectile dysfunction among 7689 patients with diabetes or hypertension, or both. *Urology*, 64(6), 1196–1201.

Информация об авторах:

© АХУНБАЕВ О.А.- Ассистент кафедры Госпитальной терапии Ферганского медицинского института общественного здоровья. г.Фергана, Узбекистан.

Muallif haqida ma'lumot:

© AXUNBAYEV O.A.- Farg'ona jamoat salomatligi tibbiyot instituti, Gospital terapiya kafedrasi assistentni. Farg'ona sh., O'zbekiston.

Information about the authors:

© AKHUNBAEV O.A.- Assistant, Department of Hospital Therapy Fergana Medical Institute of Public Health. Fergana, Uzbekistan.