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Introduction
Melatonin is a crucial hormone for controlling sleep rhythms and disruption of its natural secretory rhythmicity is considered to be one of the causes of type 2 diabetes mellitus. The MTNR1B gene encodes the melatonin receptor. Polymorphism rs10830963 in this gene shows an association with fasting blood glucose and impaired glucose tolerance. Current studies suggest that carriers of the minor allele G have a slightly shifted cycle of melatonin secretion toward a later rise in the evening and a slower decline in the morning, which may interact with social pressure on early morning activity and thus adversely affect glucoregulation. The aim of this study was to determine whether the polymorphism is projected into sleep patterns, biorhythms and chronotype evaluated through a questionnaire.
Methods
A total of 268 volunteers completed the MCTQ (Munich chronotype questionnaire) to determine sleep habits and chronotype. The average age did not differ significantly between the compared genotype groups. The ratio of women/men in the groups was also similar. Genotyping was performed on a TaqMan instrument (LC480, Roche), data were evaluated by NCSS/PASS 2020.
Results
Minor variant G was present in a heterozygous constellation in 124 participants (46%) and in a homozygous constellation in 26 (10%) with an allelic frequency of 33%. The remaining 118 individuals (44%) were homozygous in the common variant C. The average length of sleep on weekdays and days off did not differ between the groups, nor did the mid-sleep phase on weekdays and days off. The chronotype calculated from the mid-sleep phase values corrected for sleep debt accumulated during working days was also comparable. The time of subjective maximum daily activity was similar in all three genotype groups, with a median at 11 a.m. The social jat lag resulting from the discrepancy between the natural biorhythm and work/social duties averaged 0.85 ± 0.698 h regardless of genotype. Interestingly, while in the groups with CG and CC genotype there were about 9% of people with very low caffeine consumption, in the group of homozygous GG carriers, individuals with low caffeine requirement were completely absent.
Conclusion
In the sample of the Czech population, we did not observe significant differences in sleep patterns and chronotype between the groups formed depending on the rs10830963 SNP genotype of the MTNR1B gene.Grant support: NU20-01-00308 and MZ CZ RVO EÚ00023761

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“ Features of the angiography of the eye bottom in patients with diabetic retinopathy” “

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The purpose of the study is to study the F = features of the angiography of the eye bottom in patients with diabetic retinopathy in patients with type 2 diabetes mellitus (DM2), with different stages of diabetic retinopathy (DR).
Material and research methods
252 people were examined ($n = 504$), of which 168 patients with type 2 type and 84 practically healthy persons. The main group (I; $n = 174$) with DM2, divided into subgroups, depending on the stage of DR: Easy non-proliferative DR (NDR), moderate NDR, severe NDR and PDR. As a comparison group (II; $n = 162$), patients are included without clinical manifestations of others (III; $n = 168$) - the control group was almost healthy faces without significant ophthalm and somatic pathology.All patients conducted a standard and specialized ophthalmological examination. Optical coherent tomography in the angio mode is made using an Optical Cherent Tomograph RevOFC with an angiography module with a 3×3 mm scan area. The level of VEGF in serum was evaluated by solid-phase immunoassy analysis using Quantikine ELISA sets.
Results
Analysis of the blood flow density indicates a significant decrease (P0.05) of this indicator in a subgroup of patients with a type of type 2 without DR and an average NDR on average by 3-5% compared with the control group. While with a moderate NDR - this figure is reduced by 12%, with a severe NDR - by 17%, at DA, by 19%. The area of the phases at DM 2 of the type without OB was higher than the norm by 21%, with a light NDRT 24%, with a moderate NDR - by 28%, with a heavy NDR - by 56%, with a PDR - to 62%.
Conclusions
Detected depletion of the peripheolar vascular drawing among patients without clinical signs of others.

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Impact of glucoregulation and duration of diabetes on the incidence of diabetes chronic complications in Republic of Srpska/Bosnia and Herzegovina

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Background/Aim.
Importance of glucoreglation qality in diabetes complication prevention was proven in numerous clinical studies. Aim of this study is to determine impact of glucoregulation and duration of diabetes on the incidence of chronic complications of diabetes in Republic of Srpska (RS).
Method
Study model included subjects with T1D and T2D who participated in the two-year project in the RS. It was a cross-sectional study with 1088 participants. Specially designed questionnaire included data obtained by objective trial, clinical examination, data on antihyperglycemic treatment, and patient’s record data regarding diabetes and diabetes complications. The quality of glycoregulation was assessed based on glycosylated hemoglobin (HbA1c) values.
Results
Finally, study included 1037 subjects, 4.6% with T1D and 95.4% with T2D, 576 women (55.5%) and 461 (44.5%) men. Poor glycemic control (Hba1c $\geqq$6.5%) was found in 61.1% of subjects ($\chi^2 = 4.874$, df = 1, $P = 0.027$) and percentage of this patients increased with longer diabetes duration. Among patients with diabetes, more than 10 years’ duration, poor glucoregulation (HbA1c $\geqq$ 6.5%) was recorded in 84.6% with T1D and 76.1% with T2D; with less than 5 years’ duration was recorded in 58.30% of patients with T1D and 48.0% with T2D. The most common complication was neuroischemic foot (55.8%), statistically significantly more frequently observed in patients with HbA1c $\geqq$ 6.5% ($\chi^2 = 5.220$, df = 1); microalbuminuria (49.2%) was reported most frequently in diabetes of 5-10 years’ duration. Polyneuropathy (42,5%) and microalbuminuria were more common in T2D ($\chi^2 = 10.217$, df = 1, $P = 0.001$), while retinopathy (25,0%) was more common in T1D. Microvascular complications were statistically significantly more common in patients with unsatisfactory glycoregulation as well as longer duration of diabetes, especially in patients with T2D and disease duration over 10 years.Cardiovascular disease was recorded in 82.0% of T2D patients with HbA1c $\geqq$ 6.5% and in 82.1% of those with HbA1c $\leq$ 6.5%, with no statistically significant difference with regard to glucoregulation quality.
Conclusion
It can be concluded that 3/5 of diabetes patients in RS (61.1%) have poor glucoregulation. Microvascular complications, have higher incidence in patients with poor glucoregulation Longer T2D duration significantly increases incidence of microvascular complications, especially disease duration of 10 years or more. Cardiovascular complications are present in high percentage regardless of quality of glycemic control. These results are similar to results from developing countries and indicate the need for implementation of additional, interventional measures for improving glucoregulation and reducing chronic complications in patients with diabetes in RS.

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Cochleo-vestibular disorders in diabetic patients

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Introduction
Cochleovestibular disorders in patients with diabetes is not well known as compared to other complications. The aim of this study was to evaluate the epidemiological, clinical and paraclinical characteristics of cochleovestibular dysfunction in diabetes.
Materials and Methods
This is a retrospective study of 100 diabetic patients. The patients had a clinical otological and vestibular examination as well as a tonal audiometry and a video nystagmography.
Results
The mean age of our patients was 50.97 years with extremes ranging from 17 to 82 years. A female predominance was noted with a sex ratio of 0.66. The mean