urine and blood samples were taken. Cerebelline, adrenaline, noradrenalin, metanephrine and normetanephrine levels were measured by ELISA. Other biochemical parameters (FBG, HbA1c, LDL, TG) were measured by autoanalyzer. In addition, the clinical characteristics of the collected patients were also recorded including age, gender, blood pressure and BMI.
Result
The BMI profile was similar among control, HT and HT + DM groups ($P > 0.05$). There was a significant decrease in blood and urine cerebellin, metanephrine and normethanephrine levels in the study patients compared with the control group, both before and after treatment ($P < 0.05$). When compared with the control group, the adrenaline levels in both urine and blood were increased in HT and HT + DM groups ($P < 0.05$). When compared with the control group, a significant increase in blood noradrenalin level was observed in HT group but decreased in HT + DM group. In addition to, when compared with control group, the urine noradrenaline level was increased in both HT and HT + DM groups ($P < 0.05$).
Conclusion
This result suggest that there is a relationship between cerebellin, catecholamine and catecholamine metabolites in HT and HT + DM patients. In the future, there is a need for further studies on the possibility that these biomarkers can give an idea about the etiopathogenesis of diseases such as HT, DM.
Key Words: Hypertension, diabetes mellitus, cerebellin, catecholamines
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The prevalence of microvascular complications in the adults with type 1 diabetes and the glycemic control in the Republic of Belarus

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According to the current expert recommendations it is advisable to screen microvascular complications: diabetic peripheral polyneuropathy (DPN), diabetic retinopathy (DR), diabetic nephropathy (DN) in all patients with type 1 diabetes mellitus (T1D) and disease duration of 5 years. Therefore, the aim of the study was to assess the clinical and laboratory parameters of patients with type 1 diabetes at the age of 30 − 45 years with duration of the disease 5–15 years, taking into account adherence to the implementation of recommendations for the control of glycemia.
Materials and methods
360 T1D patients, 196 (54.4%) men and 164 (45.6%) women were examined. The average age of the patients was 37.9 ± 4.5 (37.4 − 38.4) years, the age of diabetes onset – 28.1 ± 6.2 (27.5 − 28.8) years, duration of the disease – 9.0 (7.0 − 12.0) years, body mass index – 24.8 ± 3.95 (23.6 − 25.2) kg/m^2. The study carried out a detailed clinical examination of patients with medical record analysis. The study was conducted within the framework of the nationwide action 'Early Detection of Chronic Complications of Type 1 Diabetes Mellitus in Adults'. Patients completed questionnaires of adherence to the implementation of recommendations for the glycemic control, the results of which were divided into two groups: 1st group (Gr1) − 257 (71.4%) people − predominantly compliant patients, 2nd (Gr2) − 103 (28.6%) people − mostly not committed to the control of glycemia. To verify the DPN the Vibratip device also used.
Results
In 36.9% cases DPN was diagnosed; DR – in 21.7%, DN − in 40.6%, albuminuria – in 38.1% cases. Microvascular diabetic complications were in 270 (75%) patients. The level of Hb_{A1c} used to estimate the compensation of glycemia, averaged 8.37 ± 1.83 (8.18 − 8.56), while in Gr1 the index was significantly lower than in Gr2: 8.20 ± 1, 83 vs 8.80 ± 1.75%, however, in both groups, the target values were not achieved. There were significant differences in groups in the presence of DPN − 33.5 vs 45.6% ($\chi^2 = 4.67$, $P = 0.030$), microvascular complication − 71.6 vs 83.5% ($\chi^2 = 5.55$, $P = 0.018$). However, there were no differences in the prevalence groups of DN − 62.6 vs 51.5% ($\chi^2 = 4.67$, $P = 0.051$), albuminuria 35.4 vs 44.7% ($\chi^2 = 4.67$, $P = 0.030$), DR − 51.4 vs 54.4% ($\chi^2 = 2.66$, $P = 0.102$).
Conclusions
In 75% cases of T1D fixed microvascular complications. Adherence to the control of glycemia without reaching the target values is associated with the diabetic neuropathy, but does not affect the development of diabetic retinopathy and nephropathy.
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Inflammation in patients with diabetic nephropathy receiving different classes of glucose-lowering medications: serum levels of interferon gamma

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Proinflammmatory cytokines including interferon gamma (IFNg) are known to be involved in the pathogenesis of diabetic nephropathy. The aim of this study was to assess serum level of IFNg and its clinical correlates in patients with type 2 diabetes and early CKD receiving different types of treatment. We investigated 64 patients with type 2 diabetes and CKD stages 1-3. Group 1 included 20 patients on insulin therapy. Group 2 included 44 patients on metformin or combined oral hypoglycemic therapy. Groups were comparable on the basis of sex, age, body mass index and eGFR. In addition to routine clinical tests, we measured serum levels of ferritin, homocysteine, interleukin-6 and IFNg. Mann-Whitney *U*-test and Spearmen's correlation coefficient (rs) were used for statistical analysis. Serum level of IFNg was elevated in 20.0% patients from group 1 and 31.8% patients from group 2. Mean level of this cytokine was significantly higher in group 2 as compared to group 1 (14.6 ± 2.4 pg/ml vs. 6.5 ± 1.7 pg/ml, respectively, $P = 0.018$). In both groups serum concentration of IFNg had no significant correlations with age, body mass index, eGFR (CKD-EPI), albuminuria, hemoglobin, homocysteine, total cholesterol, lipid fractions, and interleukin-6. Only in group 1 (but not in group 2) the level of IFNg correlated with serum ferritin level ($rs = -0.629$, $P = 0.003$) and platelets count ($rs = 0.547$, $P = 0.013$). The results of the study suggest that insulin therapy is associated with lower serum level of IFNg in patients with type 2 diabetes and early CKD after adjustment for sex, age, body mass index and eGFR. This could be related to anti-inflammatory effects of insulin. In insulin-treated patients, serum level of IFNg correlates negatively with serum ferritin level and positively – with platelets count.
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The relationship between morbidity and mortality and HbA1c level in major surgery applied with diabetic patients

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Background
Diabetes Mellitus (DM) is a disease that increasing in prevalence rapidly in our country and in the world with the increase of sedentary life and unhealthy nutrition. The risks of surgery applied in diabetic patients differ according to other patients.
Aim
We aimed to investigate the relationship between the preoperative HbA1c levels and the complications and mortality rates in the postoperative period in patients with diabetes diagnosis and was applied major surgical treatment.
Method
We included patients who underwent major surgery between January 1, 2015 and December 31, 2016 in our hospital and who had been diagnosed with type 2 diabetes and had been looked at HbA1c levels preoperatively. A total of 1013 patients whose file data were completely accessed, were included in the study. Preoperative HbA1c levels of the patients and complications seen within the first 7 and first 30 days postoperatively were recorded.
Results
Forty nine (4.8%) of the patients were exitus in the hospital while 964 (95.2%) of patients were discharged. Preoperative HbA1c levels of the patients were found to be predictive marker of mortality in the first 7 and 30 days postoperatively ($P < 0.05$). Preoperative HbA1c value was found to be very significant in predicting the complication, wound infection, total infection risk within the first 7 and 30 days postoperatively ($P < 0.001$).
Discussion
It is very important to base HbA1c levels on preoperative surgical risk assessment in diabetic patients. Better provision of long-term glycemic control in patients

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