were used to evaluate cognitive functions. Serum Granzyme B was measured by Human Granzyme B Elisa kit.

As the results of our study showed, mild cognitive impairment was diagnosed in 47 patients with diabetes, dementia – in 23 subjects accordantly. Type 2 diabetes patients had serum levels of Granzyme B by 56% higher than the control group. The changes were statistically insignificant in the group of patients with mild cognitive impairment, while in subjects with dementia the level of Granzyme B was almost twice higher than in the control. *Positive* correlations were established between the MMSE and MoCA tests results and levels of Granzyme B, whereas direct correlation – between the latent period P300 and levels of Granzyme B.

Thus, serine protease Granzyme B can play a role in the mechanisms of brain damage in type 2 diabetes by converting inactive procaspase 3 to active caspase 3. Activation of cytotoxic T-cells leads to the release of perforine and granzymes from their granules. Perforine forms in the plasma membrane of target cells the pores through which granzymes penetrate. Also, recent studies have shown that Granzyme B plays an important role in the processes of destabilization of atherosclerotic plaques, that are especially significant in the aspect of vascular dementia in diabetes.

Cognitive impairment in patients with type 2 diabetes is accompanied by an increase in granzyme-induced apoptotic processes, which can play an important role in the mechanisms of both cerebrovascular and neurodegenerative disorders.

Pavlovych L.B.

CORRECTION OF VITAMIN D INSUFFICIENCY IN PERSONS OVER 45 YEARS OLD WITH IMPAIRED GLUCOSE TOLERANCE

Department of Clinical Immunology, Allergology and Endocrinology
Bukovinian State Medical University

The objective of the study was to evaluate the effect of vitamin D deficiency correction on weight dynamics, fasting hyperglycemia in persons over 45 years of age with impaired glucose tolerance.

48 patients were examined (32 women 66 7% and 16 men 33.3%) aged 45-60 years (median (Me) – 52.5 years), BMI 29.5±0.7, The duration of impaired glucose tolerance was more than 1 year, vitamin D deficiency (concentration 25 (OH) D 21-30 ng / ml) was diagnosed within the last 6 months. The experimental group included 28 patients with impaired glucose tolerance who received metformin therapy at a dose of 850 mg at night; an aqueous solution of vitamin D at a daily dose of 4000 IU/day. The control group consisted of patients (20 people) with impaired glucose tolerance who were on therapy with metformin 850 mg at night and diet therapy enriched with vitamin D. The level of vitamin D and its effect on glycemic parameters and body mass index (BMI) was evaluated during the day at the beginning and after 10 weeks of observation. Statistical processing was carried out using the Statistic 7.0 software.

After 10 weeks of therapy, in patients with impaired glucose tolerance, in addition to a subjective improvement in the general condition, clinical and metabolic indicators significantly improved: the level of vitamin D increased by 56% and the level of vitamin D reached target values ($p<0.001$), BMI decreased by 13.8% ($p<0.05$), fasting glycemia decreased to normal in 23%, drug withdrawal was noted in 12.9%. In the control group, fasting glycemia, prescribed therapy, vitamin D level did not change statistically significantly, the weight of patients decreased by 2.5%.

The appointment of an aqueous solution of vitamin D contributes to the elimination of vitamin D deficiency, a more effective correction of therapy with a hypoglycemic drug, weight in patients with impaired glucose tolerance, vitamin D deficiency.