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NONSPECIFIC BODY REACTIVITY IN PATIENTS WITH DIABETES MELLITUS TYPE 1

Introduction. Investigation of the adaptive body reserves, starting mechanisms of dysadaptation processes is of a high importance in relation to diabetes mellitus (DM), known to be characterized by serious disturbances of metabolic processes, significant changes of innate and adaptive immunity [1, 3], disturbances of neuroendocrine and immune interaction [5], that stipulates the severity and prognosis of the dis-

ease. The analysis of immune reactivity parameters in DM type 1 is of a special attention in concern of their timely correction and prognosis of the probable individual patient's response on administered treatment.

Considering that, the **objective** of this research was to study the changes of reactivity and adaptive body potential in patients with diabetes mellitus type 1.

Materials and methodology. 10 patients with DM type 1 (mean age – 36,50±3,83 years), represented by 2 women (20%) and 8 men (80%), participated in the study. 10 healthy individuals served as control group. The verification of the diagnosis was based on thorough clinical-anamnesic and laboratory-instrumental investigations according to the WHO recommendations. The severity of the disease was assessed by the degree of clinical symptoms manifestation. Thus, moderate severity of DM was identified in 30% of enrolled patients with DM type 1; the overwhelming majority of examined patients – 70% – were diagnosed the severe form of the disease. All participating patients were at the subcompensation stage of the disease, achieved by administration of hypoglycemic therapy – basal-bolus insulin therapy.

Integral haematological coefficients were used for the assessment of adaptive potential and general reactivity in diabetic patients [6]: leukocytic index (LI), modified leukocytic intoxication index by B.A.Reys (LII), leukocyte shift index (LSI), neutrophils to lymphocytes ratio index (NLRI), leukocytes to sedimentation ratio index (LSRI), lymphocytic-granulocytic index (LGI), nuclear intoxication index (NII), neutrophils to monocytes ratio index (NMRI). Statistical processing of the obtained data was performed by means of «Biostat» software, using paired Student's t-criterion.

Results and discussion. Integral haematological indices calculation revealed substantial changes of nonspecific resistance indices in patients with DM type 1 (table): LI and NMRI tended to be decreased (by 15,4% and 16,0% respectively), whereas other nonspecific resistance index – NLRI – was, on the contrary, increased by 19,2%. These findings evidence the impairment of nonspecific immune resistance, contributed mostly by microphages, accompanied by the deficiency of specific immune responsiveness.

Table.

Integral haematological indices in patients with diabetes mellitus type 1

Indices	Group, number of examined patients	
	Healthy individuals, n=10	Patients with DM type 1, n=10
Leukocytic index (LI)	0,52±0,02	0,44±0,04 P>0,09
Leukocytic intoxication index (LII)	1,70±0,05	1,96±0,13 P>0,07
Leukocyte shift index (LSI)	1,84±0,05	2,04±0,14 P>0,1

Leukocytes to sedimentation ratio index (LSRI)	1,85±0,20	1,32±0,27 P>0,1
Lymphocytic-granulocytic index (LGI)	4,38±0,15	3,87±0,35 P>0,1
Nuclear intoxication index (NII)	0,17±0,02	0,13±0,01 P>0,09
Neutrophils to lymphocytes ratio index (NLRI)	2,08±0,07	2,48±0,18 P=0,05
Neutrophils to monocytes ratio index (NMRI)	13,54±0,96	11,37±1,02 P>0,1

Note: values are expressed as means ± standard errors; P – significant difference in comparison with healthy individuals; n – number of patients in a group.

Disturbance of the resistance, in its turn, determines the intensity and gravity of endogenous intoxication. Thereby, the signs of intoxication were found to be enhanced in patients with DM type 1 according to LII (exceeded control index by 15,3% and LSI (was by 10,9% higher than of control). This was followed by unreliable decline of inflammation indices in patients with DM type 1 in comparison with control: LGI was only by 11,7% lower of that in control and LSRI – by 28,6%.

Even though statistically unreliable, these changes of the studied parameters allow to suggest, that intoxication accompanying diabetes is endogenous and caused, probably, by activation of the destructive mechanisms of tissue decomposition due to diabetes-associated dysmetabolic processes [2, 8]. On the background of absent neutralizing opposition by detoxicating systems of the body, whose decompensation is evidenced by decreased NI, and insufficient fermentative systems, dramatically disturbed in case of diabetes, autointoxication leads to the development of «metabolic immune defect», resulting in dysregulation of immunopoiesis, proliferation and metabolism of immunocompetent cells, autoregulation of immune response [6, 9]. Suppression of microphagic immune reactivity in patients with DM type 1, probably, stipulates the development of acquired immunity deficiency, typical for this type of the disease [1].

Conclusions:

1. Dynamics of changes of integral haematological coefficients in case of diabetes mellitus type 1 indicates the development of endogenous intoxication, whose intensity is considered not only as the consequence of metabolism disturbances, typical for diabetes, but as the cause of pathological reactions as well, modulating the influence on body immunological reactivity and immune system disorganization in particular.

2. In case of diabetes mellitus type 1 the impairment of specific immunity as well as nonspecific one is formed (mostly contributed by microphages), leading to dysregulation of cell-mediated and humoral reactions.

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ДИАГНОСТИЧЕСКИЕ И ХИРУРГИЧЕСКИЕ АСПЕКТЫ В ЛЕЧЕНИИ СИНДРОМА ВЕРХНЕЙ ГРУДНОЙ АПЕРТУРЫ

Цель: Под синдромом верхней грудной апертуры (СВГА) подразумевается нозологическая единица с многообразием клинических проявлений, обусловленные наличием множества причин, способствующих компрессии сосудисто-нервного пучка (СНП) в области верхней грудной апертуры (ВГА) и формирующих многоликую неврологическую симптоматику.