DIAGNOSTIC AND PROGNOSTIC VALUE OF SYSTEM MATRIX METTALLOPROTEINASES-1 IN PATIENTS WITH DIABETES MELLITUS 2 TYPE

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Non-alcoholic fatty liver disease(NAFLD) develops in 75-90% in patients with diabetes mellitus 2 type(DM2) and obesity(Ob). Collagen degradation is regulated by the condition of interstitial collagenases, in particular matrix metalloproteinases 1 type(MMP-1). It is necessary to determine levels of tissue inhibitor of metalloproteinases-1 TIMP-1) which regulate activity of MMP-1.

Aim. Optimisation of diagnosis and specification of prognosis NAFLD in patients with DM2 by determination of distant fibrosis markers: MMP-1 and TIMP-1.

Methods. 4 groups(grp) of patients(pts) were investigated: first grp included 30 DM2 pts without NAFLD, second grp had 20 NAFLD pts without DM2, third grp had 30 DM2 pts with NAFLD without Ob, fourth grp had 30 DM2 pts with NAFLD and Ob and also 20 healthy persons were examined. The diagnosis of NAFLD was confirmed by histology and ultrasound. Plasma levels of proMMP-1, TIMP-1 by ELISA method were studied.

Results. Progressive and significant increase in levels of proMMP-1, TIMP-1 both in comparison with control grp, and between grps, were revealed indicating increased severity of DM2 when accompanied by NAFLD and Ob.

Plasma levels	Control group	*Groups of patients* (n=120)			
		1 group	2 group	3 group	4 group
	n=20	n=30	n=20	n=30	n=40
proMMP-1, ng/ml	1.4±0.05	2.0±0.096 *	2.3±0.1 *	3.1±0.12* **/***	3.6±0.12 * ****
TIMP-1, ng/ml	373.0±1.6	396.0±2.8*	407.0±1.7* **	420.0±2.5* **/***	442.0±2.4* ****

* - p< 0.05 vs control grp, ** - p< 0.05 vs 1grp, *** - p< 0.05 vs 2 grp, **** - p< 0.05 vs 3 grp

Conclusions: Increase of levels of proMMP-1, TIMP-1 in DM2 pts were aggravated by damage of liver and contributed to clinical outcomes. There are no proven distant diagnostic markers to determine NAFLD, but evaluation of proMMP-1, TIMP-1 in pts significantly improve diagnostic of NAFLD. High MMP-1 levels were associated with the risk for development of NAFLD and useful as a noninvasive marker of NAFLD.