Vascular Medicine

THE ROLE OF TELOMERE BIOLOGY AND DIABETES MELLITUS IN VASCULAR AGING

Poster Contributions
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Background: The length of telomere (TL) is considered as a biomarker for vascular aging and cardiovascular diseases. Glucose disturbances contribute to micro- and macrovascular complications in patients with type 2 diabetes mellitus (T2DM). But the interrelation of vascular aging and cellular aging in T2DM remains a challenge.

Methods: TL was assessed by quantitative polymerase chain reaction (PCR) in 50 patients with T2DM (mean age 56±12,1 years) and in 49 healthy patients in mean age of 53,47±11,91 years. Intima media thickness (IMT) and plaque presense were determined by ultrasonography in both left and right carotid arteries. Arterial stiffness (AS) was appreciated by aortic pulse wave velocity (PWV) measuring by SphygmoCor (AtCor Medical.

Results: all patients were divided into 2 groups by TL - "long" and "short" telomeres. The median of relative telomere length (TL) was 9,75. «Short» telomeres were considered if the TL was 9.75. Comparison of vascular aging parameters was carried out in groups with and without T2DM. Results are summarized in Table 1

Conclusions: In diabetic patients with "short" telomeres the severity of vascular disorders is the highest, but in contrast, in diabetic patients with "long" telomeres vascular structure and function are the same as in healthy individuals. "long" telomeres have protective effects in patients with T2DM.

Vascular aging in patients with "long" and "short" TL						
Parameters	Long TL	Long TL	p	Short TL	Short TL	p
	T2DM+ (n=50)	T2DM- (n=49)		T2DM+ (n=50)	T2DM- (n=49)	
TL	9.51±0.1	9.8±0.1	0.033	9.24±0.1	9.28±0.06	0.73
PWV (m/s)	13.32±1.02	10.67±0.38	0.026	15.08±1.3	10.7±0.01	0.01
IMT (mm)	0.88±0.4	0.77±0.02	0.029	0.87±0.05	0.78±0.1	0.01
Plaque presense	2.0±0.2	0.75±0.1	0.048	1.125±0.29	0.789±0.22	0.04