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EDITORIAL

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Monitoring Blood Rheology in Diabetes Mellitus

Dear clinicians, researchers, colleagues and friends!

Diabetes mellitus is recognized by World Health Organization as non-infection epidemic of XXI century. It poses a global medical and social threat to individual health and society and occupies a leading place on growth of incidence, risk of complications, the level of disability and premature mortality. The medical, social and economic problems caused by diabetes and its complications are urging to adopt active measures aimed at mitigating its burden.

According to The International Diabetes Federation, 463 million people on the globe affected by diabetes (in Russia — 8,3 million people), almost 63% of them are of working age, however during the period 1980–2018 the total number of people with diabetes rose by 4 times.

Type 2 diabetes accounting for 85–95 % of overall prevalence of diabetes has a blurred, hidden duration. It is diagnosed occasionally, often with late diabetic complications in more than third of the patients. The important role in pathogenesis of diabetic complications is played not only by impairments in microcirculation but by deterioration of blood rheology.

Cerebrovascular and ischemic heart disease refers to the key factors of the increasing prevalence and mortality of diabetes. In the total structure of mortality among patients with type 2 diabetes, cerebral circulatory disorders are estimated as 12,17%, whereas myocardial infarction — 4,37%. It is worth mentioning that the incidence of cerebrovascular disease is estimated as 25,9 cases and its prevalence in patients with type 2 diabetes as — 428,8 cases per 10 000 adults.

Current advances in angiocardiology and neurology enable to determine a mechanism for the development of cerebral ischemia. Moreover, sometimes, the leading role in the genesis of stroke is seen in transformation of blood biochemistry, disturbance of homeostasis and fibrinolysis as well as dysfunction of the endothelia. Specialists note that even temporary hyperglycemia induces long-term epigenetic changes, persistent hyperproduction of reactive oxygen species and reduced activity of antioxidant ferments. Such changes lead to endothelial dysfunction, apoptosis, chronic inflammation in vascular wall and facilitate the development of atherosclerosis as a major vascular process and an underlying mechanism of the cerebral disease.

Subacute cerebrovascular disease in type 2 diabetes occurs due to reduction of the necessary perfusion of the brain and is accompanied with progressive disorders affecting gait and pelvic organs; emotional problems and cognitive decline. Modern researches have accumulated the evidence that type 2 diabetes is associated with the development of cognitive deficits and dementia.

Our knowledge on diabetes is constantly expanding. Novel advances are incorporated into medical practice in the shortest time. In the arsenal of physicians there are effective and safe medications, devices for self-control that provide better detection, therapy and control of this chronic condition.

In the section *Clinical Laboratory Diagnosis* you will find a paper where rheological properties of peripheral blood in patients with type 2 diabetes of different duration are discussed. Using HbA1c monitoring as the basic diagnostic and prognostic criterion for the course and outcome of cerebrovascular disease in patients with endocrinopathy allows to choose an adequate pathogenetic and personified therapy and to improve the quality of life and outcomes in this popu-lation.

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