**PROINFLAMMATORY CYTOKINES AND CARBOHYDRATE METABOLISM**

Ashcheulova T, Kochubei О.

Kharkiv National Medical University

Recently, there is large research of the role of inflammation in the pathogenesis of diseases such as essential hypertension, diabetes mellitus and its complications. Assumed that the inflammation and activation of the immune system may be associated with the pathogenesis of diabetes mellitus.

Inflammation is a biological response to harmful stimuli. Inflammatory mediators for example cytokines and chemokines are produced with defective regulation. Chronic inflammation develops if the inflammatory response continues and acute inflammation is unable to destroy the harmful stimulus. Inflammation is a consequence of the activation of innate immunity. The innate immune system is a non-specific primary defense mechanism against environmental threats such as microbial infection and physical or chemical injury. It does not exhibit a memory response, and it reacts similarly to a variety of organisms and threats. Innate immune system is responsible for the acute phase response, caused by many cells. macrophages, adipocytes, endothelial cells secreting cytokines like IL-1, IL-6, TNF-α. To date more than 200 cytokines have already been found. Cytokines are divided into subgroups of interleukins, growth factors, chemokines, interferons, hematopoietins etc. Acute-phase proteins like fibrinogen, CRP, serum amyloid-A and others are mainly synthesized in the liver, and their production is stimulated by the cytokines of the innate immunity process and response. Furthermore cytokines are divided into pro-inflammatory and anti-inflammatory cytokines. Inflammatory mediators take part in many metabolic and inflammation processes.

The proinflammatory cytokines interleukin-6 family such as oncostatin M and interleukin‑6 play a pivotal role in physiological and pathophysiological processes, including hematopoiesis tissue reconstruction, development and cell growth. Oncostatin M is a 28-kd glycoprotein and a polyfunctional cytokine produced mainly by activated T lymphocytes, monocytes, and macrophages, the inducible production of which can occur in many, if not all, tissues. Oncostatin M belongs to the interleukin -6 family that controls differentiated cell function and proliferation. Oncostatin M are known to signal through the transmembrane protein - specific receptor that heterodimerizes with glycoprotein 130 and stimulate pathways. Cytokine forms a complex ligand-receptor gp 130/LIFR on membrane cell and provides mitotic and proliferative effects. A variety of biological effects of oncostatin M are considered in the review. Mechanisms of influence of oncostatin M and its interaction with the different structures of the organism are represented.

According to the latest research can be concluded that inflammatory markers might be prognostic factors not only diabetes mellitus but also the complications associated with diabetes.

Summarizing literature data on the results of studies of cytokines, suggests that they are important factors involved in the pathogenesis of most cardiovascular diseases, including the pathogenesis of essential hypertension, accompanied by disorders of carbohydrate metabolism. Thus, the definition of clinical and biochemical, immune status of patients; determine the factors that may contribute to the development prediabetes, diabetes mellitus in patients with essential hypertension is relevant and timely and is important theoretical and practical significance.