INDICATORS OF INFLAMMATION AND OXIDATIVE STATUS IN PATIENTS WITH TYPE 2 DIABETES

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Introduction. The diabetes mellitus (DM) is the main risk factor for cardiovascular diseases that are the most common reason of death within adult people with DM. Insufficient glycemic control in patients with DM is the one of the principal factors of atherogenesis initiation and micro and macro vascular complications. At the DM type 2 the inflammation process is in the base of insulin resistance pathogenesis and chronic complications, it is related to the oxidative stress and prothrombotic condition that in their turn enforce endothelial dysfunction and atherogenesis. That is why the determination of inflammation markers is the important step in prognostication and assessment of risks of complications in patients with DM.

Aim. The aim of the work was to study the level of ceruloplasmin, fibrinogen and seromucoids in patients with DM type 2 with the unsatisfied glycemic control and against therapy.

Materials and methods. The indexes of 24 patients with DM type 2 leaving in Kharkivska Oblast` and hospitalized in Kharkiv Oblast` Clinical Hospital were used. In the moment of hospitalization the patients had unsatisfied glycemic control. The assessment of ceruloplasmin concentration in blood serum was performed with the assay kit CORMAY (CORMAY Ceruloplasmin). The assessment of fibrinogen in blood serum was performed with the assay kit CORMAY (CORMAY Fibrinogen). The assessment of seromucoids by turbidimetric method was performed with the assay kit of TOV Genesis.

Results and discussion. It has been revealed that the level of ceruloplasmin – the late reactant of acute phase and also serum oxidase that play an important role in ferrum and cuprum metabolism and antioxidant protection - in comparison with the reference indexes in patients with DM type 2 is slightly increased (1.2 times, $1> p >0.05$). It is probable that the levels are increased as well as of seromucoids (almost 1.5 times, $p\leq0.05$) – protein fractions of blood plasma that refer to the serum glycoproteins and their increased level is associated with the inflammation process; and of the fibrinogen (1.5 times, $p\leq0.05$) – one of the reactants of acute phase and component of hemostasis system. The resulting data correlate to the literature data on the increase of anti-inflammatory and prothrombotic condition and oxidative stress against DM. Such developments testify a high risk of chronic complications in this group of patients and for that reason the doctors` operational priority is the adequate therapy adjustment and strict glycemic control.

After the treatment, the indexes of anti-inflammatory and prothrombotic status and antioxydative stress have normalized in the group of patients who had satisfied glycemic control against received therapy. Such results prove the decrease of atherogenicity level in these patients that means the adequate therapy contributes to the risk decrease of cardiovascular events in future. Some patients who didn`t reach the adequate glycemic control and whose ceruloplasmin, fibrinogen and seromucoids levels stayed increased are in the group of risk of cardiovascular events.

Conclusions. The obtained results showed the dependence of the inflammatory and prothrombotic status and oxidative stress from the glycaemia level in patients with DM type 2. The biochemical studies results assessment in patients with DM type 2 testifies the important role of timeous disorder detection of glucose homeostasis and adequate therapy prescription to decrease significantly the inflammatory and oxidative conditions that means the risk of undesirable events in patients with DM type 2 in future.