

THE ACTIVITY OF INFLAMMATORY PROCESS AND THE BLOOD REDOX STATUS IN PATIENTS WITH CORONARY HEART DISEASE AND TYPE 2 DIABETES MELLITUS

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To determine the relationship between indicators of inflammatory processes and the blood redox status of type 2 diabetic patients with and without coronary heart disease (CHD).

89 healthy subjects (group 1), 67 patients with type 2 diabetes mellitus (group 2), 44 patients with type 2 diabetes mellitus and coronary heart disease (group 3) were included in this study. FMLP- and Con A-induced generation of H₂O₂ by neutrophils was determined by a fluorescence scopoletin assay. Serum concentrations of IL-1 β , IL-6 and IL-8 were determined by ELISA using commercial kits. Concentrations of thiobarbituric acid reactive substances (TBARS) both in plasma and in atherogenic lipoprotein, reduced (GSH) and oxidized glutathione, as well as the activity of glutathione peroxidase and glutathione reductase (GR) in erythrocytes, and that of catalase (CAT) in plasma were determined by spectrophotometric methods. The glutathione redox potential (Eh) was calculated by the Nernst equation.

Tendency to increase of the neutrophil NADPH-oxidase activity was noted both for the patients of 2-nd and 3-d groups compared to the 1st one. Significant increase in IL-6 concentration was found in the 2-nd and 3-d groups; the IL-8 concentration was more increased in the 3-d group compared to the 1st group. Increased plasma concentration of TBARS was observed for patients from the 2-nd and 3-d groups. The copper-induced lipid oxidation in vitro before incubation was higher for the group 3 patients compared to the 1st group. The decreased activity of CAT and GP was revealed in the 2-nd and 3-d groups compared to the 1st group. A decrease in total glutathione and GSH concentrations was found for the 3-d group. The values of Eh have been shown to be increased for the 3-d group compared to the 1st one.

High cytokine concentrations and changes in glutathione level as well as Eh can be considered as prognostic markers for assessing the risk of CHD progression in diabetic patients.