

CELLULAR IMMUNITY PARAMETERS IN PATIENTS WITH CORONARY ARTERY DISEASE UNDERGOING CORONARY ARTERY BYPASS GRAFTING**Mukhammedov Akobir Bakhtiyorovich**

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Purpose of the study. To determine the prognostic value of cellular immunity parameters in patients with coronary artery disease undergoing coronary artery bypass grafting under cardiopulmonary bypass.

Materials and methods. Patients with coronary artery disease undergoing coronary artery bypass grafting (CABG) under cardiopulmonary bypass were examined in the preoperative and early postoperative periods. Peripheral venous blood samples were collected according to a standardized protocol before surgery and after the intervention. Lymphocyte subpopulations (CD3⁺, CD4⁺, CD8⁺, CD16⁺, CD20⁺) were evaluated in peripheral blood using immunological laboratory methods with monoclonal antibodies. Quantitative assessment of lymphocyte subsets was performed to characterize cellular immunity status. The obtained data were analyzed through dynamic follow-up, comparative evaluation of pre- and postoperative parameters, and statistical analysis using standard variation and correlation methods.

Results. CABG performed under cardiopulmonary bypass was associated with a marked redistribution of lymphocyte subpopulations in the early postoperative period. A significant increase in CD8⁺ and CD16⁺ cells was observed, reflecting activation of cytotoxic T-lymphocytes and natural killer-mediated innate immune responses triggered by surgical trauma and extracorporeal circulation. Simultaneously, a relative decrease in CD4⁺ lymphocytes indicated a shift in immunoregulatory balance and transient suppression of helper T-cell-mediated responses. Variations in CD3⁺ and CD20⁺ populations suggested a generalized immune activation involving both T- and B-cell compartments. The degree of lymphocyte redistribution was more pronounced in patients demonstrating a stronger systemic inflammatory response. Patients with higher inflammatory activity showed greater deviations in cellular immunity parameters. Correlation analysis revealed significant associations between lymphocyte subset changes and markers of inflammatory activity, confirming their link with postoperative immune reactivity and the intensity of the systemic inflammatory response.

Conclusion. Cellular immunity parameters reflect the degree of immune activation after CABG and characterize the intensity of the postoperative inflammatory response. Monitoring lymphocyte subpopulations may provide additional information for assessing postoperative condition and identifying patients with a higher risk of inflammatory complications. These indicators can be considered supportive immunological markers in the comprehensive evaluation of patients after CABG.