INTERNATIONAL MULTI DISCIPLINARY JOURNAL FOR RESEARCH & DEVELOPMENT
eISSN 2394-6334 Impact factor: 8.854 Volume 13, issue 02 (2026)

NEUROHUMORAL IMBALANCE AND FUNCTIONAL STATUS OF CORONARY GRAFTS IN THE POSTOPERATIVE PERIOD AFTER CORONARY ARTERY BYPASS GRAFTING IN PATIENTS WITH ISCHEMIC HEART DISEASE

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Background. Ischemic heart disease (IHD) is characterized by high mortality and disability rates among cardiovascular diseases. In cases of multivessel coronary artery disease, coronary artery bypass grafting (CABG) is an effective method of myocardial revascularization. However, persistence or recurrence of clinical symptoms in the postoperative period is not always explained by the anatomical patency of grafts. Recent studies indicate that dysfunction of the sympathoadrenal system (SAS), catecholamine secretion, and their metabolic regulation play an important role in this process.

Objective. To evaluate the impact of sympathoadrenal system dysfunction on the functional status of coronary grafts in the postoperative period after CABG in patients with ischemic heart disease and to identify the main pathogenetic mechanisms.

Materials and Methods. The study is based on a systematic literature review analyzing modern scientific sources on sympathoadrenal system activity in the post-CABG period, catecholamines (epinephrine, norepinephrine, dopamine), enzyme systems responsible for their metabolism (MAO, COMT), endothelial dysfunction, and microcirculatory disorders affecting coronary graft function.

Expected Results. Literature analysis indicates that increased SAS activity in the post-CABG period may limit blood flow through coronary grafts via vasoconstriction, endothelial dysfunction, and microcirculatory impairment. Prolonged elevation of catecholamine levels is associated with impaired activity of MAO and COMT enzyme systems, creating conditions for the development of functional graft spasm. As a result, insufficient myocardial perfusion may be observed even in anatomically patent grafts.

Conclusion. Sympathoadrenal system dysfunction in the post-CABG period is one of the key pathogenetic factors determining the functional status of coronary grafts. Neurohumoral disturbances associated with catecholamines and their metabolism restrict blood flow through grafts and negatively affect clinical outcomes. Comprehensive assessment of autonomic and neurohumoral markers in evaluating graft function is important for improving long-term prognosis after CABG.

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