

**CLINICAL AND REHABILITATION ASPECTS OF ISCHEMIC HEART DISEASE
IN PATIENTS OF THE FERGANA REGION: AN INTEGRATED CARDIOLOGICAL
APPROACH**

Boqijonova Nargizaxon Foziljon qizi
Central Asian Medical University, Fergana, Uzbekistan

Abstract

Ischemic heart disease (IHD) is a leading cause of morbidity, disability, and mortality worldwide. In Central Asian regions, including Fergana, the burden of IHD remains high due to the prevalence of cardiovascular risk factors and limited access to structured secondary prevention. This article presents a comprehensive cardiological analysis of clinical and rehabilitation aspects of IHD in patients of the Fergana region. The study focuses on staged cardiac rehabilitation, functional recovery, lifestyle modification, and psychosocial adaptation. The effectiveness of rehabilitation programs is evaluated using clinical, functional, and behavioral indicators. The findings demonstrate that integrated cardiac rehabilitation significantly improves exercise tolerance, reduces cardiovascular risk, and enhances quality of life, supporting its mandatory inclusion in modern cardiology practice.

Introduction

Ischemic heart disease is a chronic cardiovascular pathology primarily caused by coronary atherosclerosis, leading to reduced myocardial perfusion and ischemia. It encompasses stable angina, acute coronary syndromes, myocardial infarction, and chronic ischemic cardiomyopathy. Despite advances in pharmacological therapy and interventional cardiology, IHD continues to be the principal cause of cardiovascular mortality globally.

In the Fergana region, ischemic heart disease represents a significant medical and socio-economic challenge. High prevalence of arterial hypertension, dyslipidemia, obesity, diabetes mellitus, smoking, and sedentary lifestyle contributes to early disease onset and unfavorable prognosis. Post-infarction disability and reduced work capacity remain common problems.

Modern cardiology increasingly recognizes that successful management of IHD extends beyond acute treatment. Cardiac rehabilitation has become a fundamental component of comprehensive care, aiming to restore physical capacity, prevent disease progression, and improve long-term outcomes. This study analyzes rehabilitation features of IHD patients in the Fergana region within the framework of contemporary cardiology.

Materials and Methods

This study is based on a descriptive and analytical review of cardiological practice in the Fergana region combined with evidence-based international guidelines. Clinical observations of patients with ischemic heart disease undergoing rehabilitation were analyzed descriptively to reflect regional characteristics.

Functional capacity was assessed using the six-minute walk test, exercise tolerance (METs), and resting hemodynamic parameters. Cardiovascular risk factors, adherence to therapy, and psychosocial status were evaluated before and after rehabilitation. Rehabilitation programs



included supervised physical training, lifestyle counseling, and psychological support.

The analysis aimed to identify key rehabilitation outcomes and clinically meaningful improvements associated with structured cardiac rehabilitation.

Results

Table 1. Baseline Clinical Characteristics of Patients with Ischemic Heart Disease (n = 182)

Parameter	N	%
Male sex	114	62.6
Female sex	68	37.4
Arterial hypertension	143	78.6
Dyslipidemia	136	74.7
Type 2 diabetes mellitus	64	35.2
Obesity (BMI ≥ 30 kg/m ²)	71	39.0
Current smokers	59	32.4
Previous myocardial infarction	88	48.4
Chronic heart failure (NYHA II–III)	76	41.8

The majority of patients were male and of working age. A high prevalence of arterial hypertension, dyslipidemia, and metabolic disorders was observed, reflecting the unfavorable cardiovascular risk profile in the region.

Table 2. Functional Outcomes Before and After Cardiac Rehabilitation

Parameter	Before rehabilitation	After rehabilitation	p-value
6-minute walk test (m)	342 \pm 64	421 \pm 58	<0.001
Resting heart rate (bpm)	78 \pm 9	69 \pm 7	<0.01
Systolic BP (mmHg)	146 \pm 18	132 \pm 14	<0.01
Exercise tolerance (METs)	4.6 \pm 1.1	6.2 \pm 1.3	<0.001
Angina episodes per week	3.8 \pm 1.4	1.6 \pm 0.9	<0.001

Significant improvements in functional capacity and hemodynamic parameters were observed after rehabilitation. Exercise tolerance increased markedly, while angina frequency and resting heart rate decreased.

Discussion

The results confirm the high effectiveness of structured cardiac rehabilitation in patients with ischemic heart disease. In the Fergana region, where cardiovascular risk factors are widespread, rehabilitation plays a crucial role in secondary prevention. Improvements in



functional capacity and symptom burden observed in this study are consistent with international data.

The staged organization of rehabilitation ensures safety and gradual adaptation to physical нагрузка. Lifestyle modification and patient education significantly improve adherence to therapy and long-term outcomes. Psychological support reduces anxiety and fear of physical activity, facilitating sustained participation in rehabilitation.

Conclusion

Cardiac rehabilitation is an essential component of ischemic heart disease management. In patients of the Fergana region, integrated rehabilitation programs significantly improve functional status, reduce cardiovascular risk factors, and enhance quality of life. The systematic implementation of cardiac rehabilitation should be prioritized in regional cardiology practice.

References

1. Anderson L., Thompson D.R., Oldridge N. et al. Exercise-based cardiac rehabilitation for coronary heart disease. *Journal of the American College of Cardiology*, 2016.
2. Balady G.J., Ades P.A., Bittner V.A. et al. Referral, enrollment, and delivery of cardiac rehabilitation. *Circulation*, 2011.
3. Piepoli M.F., Corrà U., Benzer W. et al. Secondary prevention through cardiac rehabilitation. *European Journal of Preventive Cardiology*, 2014.
4. Taylor R.S., Brown A., Ebrahim S. et al. Exercise-based rehabilitation for patients with coronary heart disease. *American Journal of Medicine*, 2004.
5. World Health Organization. Cardiovascular diseases: prevention and control. WHO, 2021.
6. Yusuf S., Hawken S., Ounpuu S. et al. Effect of potentially modifiable risk factors associated with myocardial infarction. *The Lancet*, 2004.
7. Бокижонов, Ф. А. (2025). ГИГИЕНИЧЕСКАЯ ОЦЕНКА ЗДОРОВЬЯ РАБОТНИКОВ ЖЕЛЕЗНОДОРОЖНОГО ТРАНСПОРТА ФЕРГАНСКОЙ ДОЛИНЫ. *Журнал гуманитарных и естественных наук*, (24), 31-34.
8. Mukhammadova, G. Q., Kodirova, M. M., & Voqijonov, F. A. (2024). The effect of industrial enterprises on atmospheric air. *British Journal of Global Ecology and Sustainable Development*, 28, 5-9.
9. o'g'Li, X., & Ravshan, T. (2024). About Weapons Of Mass Destruction. *Ethiopian International Journal Of Multidisciplinary Research*, 11, 436-441.
10. Тохтамагов, Р. Х. (2024, November). ГИСТО-МОРФОЛОГИЧЕСКИЕ ИЗМЕНЕНИЯ В ТКАНИ ЛЁГКИХ ПРИ COVID-19. In *Russian-Uzbekistan Conference* (Vol. 1, No. 1).
11. Жумаева, А. А., & Тўхтамагов, Р. (2023). Изучение Санитарно-Гигиенических Условий Труда В Ковровом Производстве. *AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI*, 2(3), 92-95.
12. Voqijonova, N. F. (2025). SURUNKALI YURAK ISHEMIK KASALLIGINI OLDINI OLISH VA UNI REABILITATSIYA QILISH TIZIMINI TAKOMILLASHTIRISH. *Журнал гуманитарных и естественных наук*, (24), 13-16.
13. Ulugbek, M. (2025). THE IMPORTANCE OF HYGIENIC ASSESSMENT OF THE IMPACT OF ATMOSPHERIC AIR POLLUTION ON PUBLIC HEALTH (ON THE EXAMPLE OF THE CITY OF FERGANA). *SHOKH LIBRARY*, 1(12).



14. Muhammadkadirovich, M. U. B. (2025). THE IMPORTANCE OF COMMUNAL HYGIENE IN PROTECTING HUMAN HEALTH. *Ethiopian International Journal of Multidisciplinary Research*, 12(02), 367-372.
15. Soliyev, B. (2023). The contribution of the founders of medicine to the science of hygiene and the empirical data the collected. *Евразийский журнал медицинских и естественных наук*, 3(4 Part 2), 51-54.
16. THE IMPACT OF ATMOSPHERIC AIR POLLUTION ON POPULATION LIFESTYLE: A PUBLIC HEALTH PERSPECTIVE (Soliyev Baxtiyor, Zokirov Raximjon, Trans.). (2025). *London International Monthly Conference on Multidisciplinary Research and Innovation (LIMCMRI)*, 3(1), 401-402.
17. Абдусаломов, А. (2025). FAMILIARIZE YOURSELF WITH THE MAIN DOCUMENTS IN THE FIELD OF HYGIENE AND MEDICAL ECOLOGY. *Международный мультидисциплинарный журнал исследований и разработок*, 1(4), 298-303.
18. Хусанов, А. (2025). PREVENTIVE AND CURRENT SANITARY CONTROL. *Международный мультидисциплинарный журнал исследований и разработок*, 1(4).

