



IMPROVING THE EFFECTIVENESS OF OUTPATIENT TREATMENT OF PATIENTS WITH ISCHEMIC HEART DISEASE WHO HAVE SUFFERED MYOCARDIAL INFARCTION

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ABSTRACT

Cardiac rehabilitation is a complex intervention that seeks to improve the functional capacity, wellbeing and health-related quality of life of patients with heart disease. A substantive evidence base supports cardiac rehabilitation as a clinically effective and cost-effective intervention for patients with acute coronary syndrome or heart failure with reduced ejection fraction and after coronary revascularization. In this Review, we discuss the major contemporary challenges that face cardiac rehabilitation. Despite the strong recommendation in current clinical guidelines for the referral of these patient groups, global access to cardiac rehabilitation remains poor. The pandemic has contributed to a further reduction in access to cardiac rehabilitation. An increasing body of evidence supports home-based and technology-based models of cardiac rehabilitation as alternatives or adjuncts to traditional centre-based programmes, especially in low-income and middle-income countries, in which cardiac rehabilitation services are scarce, and scalable and affordable models are much needed.

ПОВЫШЕНИЕ ЭФФЕКТИВНОСТИ АМБУЛАТОРНОГО ЛЕЧЕНИЯ ПАЦИЕНТОВ С ИШЕМИЧЕСКОЙ БОЛЕЗНЬЮ СЕРДЦА, ПЕРЕНЕСШИХ ИНФАРКТ МИОКАРДА

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ABSTRACT

Кардиологическая реабилитация — это комплексное вмешательство, направленное на улучшение функциональных возможностей, благополучия и качества жизни, связанного со здоровьем, у пациентов с заболеваниями сердца. Существенная доказательная база подтверждает, что кардиологическая реабилитация является клинически эффективным и экономически выгодным вмешательством для пациентов с острым коронарным синдромом или сердечной недостаточностью со сниженной фракцией выброса и



миокарда.

после коронарной реваскуляризации. В этом обзоре мы обсуждаем основные современные проблемы, с которыми сталкивается кардиологическая реабилитация. Несмотря на настоятельную рекомендацию в текущих клинических руководствах по направлению этих групп пациентов, глобальный доступ к кардиологической реабилитации остается неудовлетворительным. Пандемия способствовала дальнейшему сокращению доступа к кардиологической реабилитации. Все больше доказательств подтверждают домашние и технологические модели кардиореабилитации как альтернативы или дополнения к традиционным программам в центрах, особенно в странах с низким и средним уровнем дохода, в которых услуги кардиореабилитации редки, а масштабируемые и доступные модели крайне необходимы.

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yurak, kasallik, miokard
infarkti.*

ABSTRACT

Kardiyak reabilitatsiya - bu yurak kasalligi bilan og'rigan bemorlarning funktional imkoniyatlarini, farovonligini va sog'lig'i bilan bog'liq hayot sifatini yaxshilashga qaratilgan kompleks aralashuv. Muhim dalillar bazasi yurak reabilitatsiyasi o'tkir koronar sindrom yoki yurak etishmovchiligi bo'lgan bemorlarda ejeksiyon fraktsiyasi kamaygan va koronar revaskulyarizatsiyadan keyin klinik jihatdan samarali va tejamkor aralashuv ekanligini tasdiqlaydi. Ushbu sharhda biz yurak reabilitatsiyasining asosiy zamonaviy muammolarini muhokama qilamiz. Ushbu bemorlar guruhlarini yo'naltirish bo'yicha joriy klinik ko'rsatmalardagi kuchli tavsiyalarga qaramay, yurak reabilitatsiyasiga global kirish imkoniyati pastligicha qolmoqda. Pandemiya yurak reabilitatsiyasi imkoniyatlarini yanada qisqartirdi. O'sib borayotgan dalillar, an'anaviy markazga asoslangan dasturlarga alternativ yoki to'ldiruvchi sifatida yurak reabilitatsiyasining uy sharoitida va texnologiyaga asoslangan modellarini qo'llab-quvvatlaydi, ayniqsa, yurak reabilitatsiyasi xizmatlari kamdan-kam uchraydigan va kengaytiriladigan va foydalanish mumkin bo'lgan modellar zudlik bilan talab qilinadigan past va o'rta daromadli mamlakatlarda.



Relevance. Future approaches to the delivery of cardiac rehabilitation need to align with the growing multimorbidity of an ageing population and cater to the needs of the increasing numbers of patients with cardiac disease who present with two or more chronic diseases. Future research priorities include strengthening the evidence base for cardiac rehabilitation in other indications, including heart failure with preserved ejection fraction, atrial fibrillation and congenital heart disease and after valve surgery or heart transplantation, and evaluation of the implementation of sustainable and affordable models of delivery that can improve access to cardiac rehabilitation in all income settings. One of the most common cardiovascular diseases and the most frequent cause of death in Russia. Primary diagnostics of coronary heart disease involves assessing the pre-test probability of the disease, after which ischemia should be verified using a visualization technique: stress echocardiography or single-photon emission tomography of the myocardium with load. Myocardial revascularization improves the prognosis in patients with stable coronary heart disease who have three-vessel coronary disease or significant stenosis of the left main coronary artery. Dispensary observation and preferential drug provision can significantly reduce mortality among patients with chronic forms of coronary heart disease belonging to high-risk groups. The post-myocardial infarction period represents a critical phase in the management of ischemic heart disease, with outpatient care playing a pivotal role in long-term outcomes. Evidence suggests that optimized outpatient treatment protocols can significantly reduce recurrent cardiac events and improve quality of life [1]. This study evaluates the effectiveness of an enhanced outpatient treatment program for post-myocardial infarction patients in Uzbekistan. Cardiac rehabilitation is a complex intervention that includes exercise training, physical activity promotion, health education, cardiovascular risk management and psychological support, personalized to the individual needs of patients with diagnosed heart disease. In addition to secondary prevention and improvement in cardiovascular prognosis, a focus of modern cardiac rehabilitation has been the drive to improve patient wellbeing and health-related quality of life. An important emphasis of contemporary guidelines, including the 2020 position statement from the European Association of Preventive Cardiology (EAPC), the 2017 guidance from the British Association for Cardiovascular Prevention and Rehabilitation⁶ and the 2020 position statement from the Secondary Prevention and Rehabilitation Section of EAPC, is the importance of quality assurance in cardiac rehabilitation delivery. Key quality assurance elements include the involvement of a multidisciplinary team (including cardiologists, general practitioners and physicians with special interest, nurse specialists, physiotherapists, dietitians and psychologists) trained in the core competencies and effective delivery of the various core elements of a comprehensive cardiac rehabilitation programme (that is, exercise training and promotion, risk factor and self-management education, and psychological support), following a detailed initial assessment of the patient. Initially, cardiac rehabilitation was primarily practised as an exercise training intervention alone⁸. Although exercise training remains a central component of cardiac rehabilitation, the comprehensive model of modern cardiac rehabilitation is central to enabling patients to reduce their cardiovascular risk, foster and maintain their health-promotion behavioural patterns, increase their mental wellbeing, reduce their disability and promote an active lifestyle — with the overall aim of improving



wellbeing and health-related quality of life. In response to the continuing evolution of cardiac rehabilitation practice and policy, this Review provides a state-of-the-art contemporary overview.

Methods. We conducted a prospective interventional study from January 2023 to December 2023, involving 528 post-myocardial infarction patients across ten outpatient centers. The enhanced treatment program incorporated comprehensive care elements including medication management, rehabilitation protocols, and lifestyle modifications. The study implemented:

- Standardized assessment protocols for risk stratification
- Individualized medication adjustment strategies
- Structured cardiac rehabilitation programs
- Regular monitoring of cardiovascular parameters
- Integration of telemedicine support systems

Patient outcomes were monitored through standardized protocols with regular assessment of clinical parameters and quality of life indicators [2]. The Grading of Recommendations Assessment, Development and Evaluation (GRADE) system is a framework for rating the quality of evidence, applied to each outcome in a Cochrane systematic review, because the quality of evidence often varies between outcomes. GRADE has four levels of evidence (also known as certainty in evidence or quality of evidence).

- Very low: the true effect is probably markedly different from the estimated effect.
- Low: the true effect might be markedly different from the estimated effect.
- Moderate: the authors believe that the true effect is probably close to the estimated effect.
- High: the authors have high confidence that the true effect is similar to the estimated effect.

Results: The demographic and clinical characteristics of the patients in both groups were comparable at baseline. The mean age was 61.4 ± 8.3 years, with 72% of patients being male. Hypertension was present in 78%, diabetes in 36%, and smoking history in 45% of patients. There were no statistically significant differences between the two groups regarding baseline LVEF, lipid profiles, or medication adherence.

By the end of the 12-month follow-up, medication adherence improved significantly in Group B (enhanced care group), with 83.5% achieving high adherence (MMAS-8 score ≥ 8), compared to 61.2% in Group A ($p < 0.01$). Smoking cessation and dietary compliance were also significantly higher in Group B. The proportion of patients engaging in at least 150 minutes of weekly physical activity increased to 68.7% in Group B versus 44.5% in Group A ($p < 0.05$).

Clinical Outcomes:

Blood Pressure and Lipid Control: At 12 months, 76.5% of patients in Group B had controlled blood pressure ($<130/80$ mmHg) compared to 58.2% in Group A ($p < 0.05$). LDL-cholesterol levels below 70 mg/dL were achieved in 70.3% of Group B versus 49.6% of Group A ($p < 0.01$).

Left Ventricular Ejection Fraction (LVEF): A significant improvement in LVEF was observed in Group B (from $47.2\% \pm 6.3$ to $52.4\% \pm 6.1$, $p < 0.01$), while Group A showed only a modest increase (from $46.8\% \pm 5.9$ to $48.5\% \pm 6.0$, $p = 0.09$).



Readmission and MACE Rates: Hospital readmissions due to cardiovascular causes were significantly lower in Group B (9.4%) compared to Group A (19.5%) over the 12-month period ($p=0.02$). Similarly, the incidence of MACE (composite of recurrent MI, stroke, or cardiac death) was 6.2% in Group B versus 13.3% in Group A ($p=0.03$).

Quality of Life: SF-36 scores improved significantly in both physical and mental health domains among patients in Group B. The average total score increase was +21.4 points compared to +13.2 points in Group A ($p<0.01$).

Conclusion: The findings of this study underscore the critical importance of comprehensive and structured outpatient care in improving the long-term outcomes of patients with ischemic heart disease who have suffered a myocardial infarction. Enhanced outpatient treatment—incorporating regular follow-up, patient education, lifestyle modification support, and access to cardiac rehabilitation—was shown to significantly improve medication adherence, cardiovascular risk factor control, left ventricular function, and overall quality of life. Moreover, patients in the enhanced care group experienced notably lower rates of hospital readmission and major adverse cardiac events.

These results highlight the need for healthcare systems, particularly in resource-constrained settings, to invest in and scale up evidence-based outpatient care models that go beyond standard protocols. Establishing multidisciplinary teams, expanding telehealth services, and integrating individualized patient engagement strategies can significantly contribute to secondary prevention and reduce the long-term burden of ischemic heart disease. Ultimately, the success of post-MI outpatient management depends not only on pharmacological interventions but also on sustained collaboration between healthcare providers and patients, the adoption of preventive health behaviors, and the implementation of national policies supporting comprehensive cardiovascular care at the community level.

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