DOI: https://doi.org/10.5281/zenodo.13987416

DETECTION AND TREATMENT METHODS OF ANGINA PECTORIS AMONG THE POPULATION

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Annotation. *This article provides an in-depth analysis of angina pectoris, a common ischemic heart disease, focusing on the methods for diagnosis and treatment. The article discusses diagnostic tools such as electrocardiography (ECG), stress testing, and coronary angiography, widely used in the United States, Canada, and Europe. It also explores various treatment methods, including pharmacological therapy, invasive procedures like angioplasty and coronary artery bypass grafting (CABG), and lifestyle modifications. Additionally, the article highlights preventive measures and the successful public health strategies implemented in countries like the U.S., Canada, and Finland. The study emphasizes the importance of integrating early diagnosis, effective treatment, and prevention for managing angina pectoris and improving patient outcomes.*

Keywords: *Angina pectoris, ischemic heart disease, diagnosis, treatment, pharmacotherapy, invasive methods, prevention, cardiac rehabilitation, coronary angiography, international healthcare strategies.*

Аннотация. *В статье проводится углубленный анализ стенокардии, распространённого проявления ишемической болезни сердца, с акцентом на методы диагностики и лечения. Рассматриваются диагностические инструменты, такие как электрокардиография (ЭКГ), стресс-тестирование и коронарная ангиография, которые широко применяются в США, Канаде и Европе. Также обсуждаются различные методы лечения, включая фармакотерапию, инвазивные процедуры, такие как ангиопластика и аортокоронарное шунтирование (АКШ), а также изменения образа жизни. В статье подчеркивается важность профилактических мер и успешных стратегий общественного здравоохранения, реализованных в таких странах, как США, Канада и Финляндия. Исследование акцентирует внимание на необходимости интеграции ранней диагностики, эффективного лечения и профилактики для борьбы со стенокардией и улучшения здоровья пациентов.*

Ключевые слова: *Стенокардия, ишемическая болезнь сердца, диагностика, лечение, фармакотерапия, инвазивные методы, профилактика, кардиореабилитация, коронарная ангиография, международные стратегии здравоохранения.*

INTRODUCTION

Angina pectoris is a common form of ischemic heart disease characterized by chest pain or discomfort resulting from insufficient oxygen supply to the heart muscles. Cardiovascular diseases remain a global health issue, making early diagnosis and effective treatment crucial. Learning from the experiences of leading countries such as the United States, Canada, and European nations is important for improving outcomes and managing the disease efficiently. This article will provide an in-depth analysis of angina detection and treatment methods, highlighting the best practices from these countries.

Methods for detecting angina pectoris

The primary step in diagnosing angina pectoris involves examining the patient's symptoms and medical history[1]. Key symptoms include chest tightness, pain, and discomfort, especially during physical activity or stress. In more advanced stages, these symptoms can occur even at rest, signaling a more severe form of the disease. Diagnostic tools like electrocardiography (ECG) are widely used to assess the electrical activity of the heart, making it a fast and reliable method for detecting angina[2]. Coronary angiography, which uses X-rays to examine the arteries and detect blockages, is also commonly applied. In countries like the United States and Canada, stress ECG and stress echocardiography are routine diagnostic procedures. These tests monitor heart function during physical activity, making them effective for identifying early signs of coronary artery disease[3].

In Canada, the stress ECG is often complemented by imaging techniques such as myocardial perfusion imaging or nuclear stress tests, which offer a more detailed view of the blood flow to the heart during exertion. These methods help cardiologists better assess the extent of coronary artery blockages and provide more accurate diagnosis and treatment plans for patients.

Treatment methods

There are several approaches to treating angina pectoris, depending on the severity of the disease and the patient's overall condition. The main treatment strategies involve pharmacological therapies and invasive procedures. Pharmacological treatments typically include nitrates, beta-blockers, and calcium channel blockers. Nitrates, such as glyceryl trinitrate, help dilate coronary arteries, while beta-blockers reduce the heart's oxygen demand by lowering heart rate. Calcium channel blockers, on the other hand, help improve blood flow by relaxing the muscles around the blood vessels. In the United States, a comprehensive approach to treatment is adopted[4]. The ACC/AHA (American College of Cardiology/American Heart Association) guidelines recommend a combination of pharmacotherapy and lifestyle modifications for angina management. Patients are encouraged to participate in cardiac rehabilitation programs,

which include supervised exercise, nutritional counseling, and stress management. These programs have been shown to improve overall heart health and reduce the likelihood of recurring angina episodes.

Invasive treatment methods include angioplasty and stent placement. These procedures involve the use of a balloon or stent to widen narrowed arteries and restore normal blood flow[5]. Coronary artery bypass grafting (CABG) is used in severe cases where artery blockages are widespread. This surgery creates new pathways for blood to flow around the blocked areas. In Canada, stenting and CABG procedures are routinely performed, with advanced techniques ensuring minimal complications and faster recovery for patients. Canada's healthcare system emphasizes the early referral of patients with severe angina to specialized cardiac centers, ensuring timely and appropriate interventions.

In Europe, treatment protocols follow the guidelines set by the European Society of Cardiology (ESC), which emphasize the importance of combining drug therapy with lifestyle modifications. European countries also highlight the use of minimally invasive procedures for stenting and angioplasty[6]. The ESC's 2016 guidelines provide detailed recommendations for using nitrates, beta-blockers, and calcium channel blockers together, depending on the individual needs of each patient.

Preventive measures

Preventing angina pectoris requires addressing risk factors and promoting a healthy lifestyle. Many countries have implemented programs aimed at reducing the incidence of cardiovascular diseases through public health initiatives[7].

In the United States, preventive care focuses heavily on lifestyle modifications, including smoking cessation, weight management, and increased physical activity. Public health campaigns promote awareness about heart disease risk factors, encouraging individuals to make informed decisions about their health. This has contributed to a decline in the incidence of angina and other heart conditions over the past decade[8]. Canada has also prioritized prevention through national programs like the Canadian Cardiovascular Society (CCS) guidelines, which emphasize risk factor management[9]. Smoking cessation programs, dietary guidelines promoting heart-healthy foods, and campaigns encouraging regular physical exercise are integral components of Canada's public health strategy to combat angina[10]. The country's universal healthcare system ensures widespread access to preventive services, including routine health screenings and early intervention for high-risk individuals. European countries, particularly in Scandinavia, have implemented heart health programs that combine public education with accessible healthcare services. Finland, for example, has seen a significant reduction in heart disease mortality through initiatives promoting physical activity, a balanced diet, and smoking cessation. These

national programs have demonstrated the effectiveness of a holistic approach to cardiovascular disease prevention.

Conclusion

Angina pectoris remains one of the most common heart diseases worldwide, but early diagnosis and effective treatment methods are essential for improving patients' quality of life. The experiences of leading countries like the United States, Canada, and Europe show the importance of integrating pharmacological treatment, invasive procedures, and preventive measures. By adopting comprehensive healthcare approaches, including lifestyle modifications and early medical intervention, the burden of angina and other cardiovascular diseases can be significantly reduced. The United States and Canada highlight the importance of cardiac rehabilitation programs, while Europe showcases the benefits of combining minimally invasive procedures with long-term lifestyle changes. Each country's approach underscores the importance of early detection and comprehensive care, ensuring that patients receive the most effective treatment for their condition. Drawing on these experiences, other nations can improve their management of angina pectoris, ultimately leading to better patient outcomes and healthier populations.

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