CARDIOVASCULAR DISEASES PREVALENCE, RISK FACTORS, AND PREVENTION

Ortikov B.B.
Ikbolova R.O.
Email: b.ortiqov@tashmeduni.uz
Email: iqbolovaruxsora2020@gmail.com
Tashkent State Medical University
DOI:https://doi.org/10.5281/zenodo.23910689

Abstract. This thesis analyses the main types of cardiovascular diseases (CVDs), their prevalence, underlying pathophysiological mechanisms, and associated risk factors based on scientific literature. The findings indicate that a substantial proportion of cardiovascular diseases are associated with modifiable risk factors. Consequently, primary prevention and early detection are key strategies for reducing mortality and disability.

Keywords: cardiovascular diseases, arterial hypertension, atherosclerosis, risk factors, prevention.

Introduction. Cardiovascular diseases rank among the leading causes of mortality and disability worldwide. According to the World Health Organization (WHO), approximately 17.9 million people die from cardiovascular diseases annually, accounting for nearly one-third of all deaths worldwide. The majority of these deaths are attributable to myocardial infarction and stroke.

The prevalence of cardiovascular diseases is increasing in association with population ageing, unhealthy dietary habits, physical inactivity, urbanisation, and increasing exposure to stress. CVDs represent not only a major medical concern but also a significant socioeconomic challenge, contributing to disability among the working-age population and increasing healthcare expenditure.

Objective. To analyse the principal types of cardiovascular diseases, their risk factors, and preventive measures based on scientific literature.

To achieve this objective, the following tasks were established: to examine the main clinical forms of CVDs, classify their risk factors, and identify effective approaches to prevention. The study involved an analysis of scientific literature, WHO reports, and clinical recommendations, using comparative, logical, and systematic analytical methods.

Main Body

1. Major Types of Cardiovascular Diseases. The most common forms of CVDs include arterial hypertension, ischaemic heart disease (angina pectoris and myocardial infarction), cerebrovascular diseases (stroke), heart failure, cardiac arrhythmias, and peripheral arterial diseases. Arterial hypertension is one of the most prevalent cardiovascular conditions. It often remains asymptomatic for prolonged periods and may only be detected after complications, such as stroke, myocardial infarction, or kidney damage, have developed.

2. Atherosclerosis and Its Complications. Ischaemic heart disease frequently develops as a result of atherosclerosis of the coronary arteries. Cholesterol-containing plaques accumulate in the arterial walls, narrowing the vascular lumen and restricting blood flow. If an atherosclerotic plaque ruptures, a thrombus may form, potentially leading to acute myocardial infarction or, in the case of cerebral arterial involvement, ischaemic stroke.

3. Risk Factors. Cardiovascular risk factors are generally divided into two categories:

Non-modifiable risk factors: age, sex, and genetic predisposition, including a family history of premature cardiovascular disease.

Modifiable risk factors: arterial hypertension, dyslipidaemia, diabetes mellitus, obesity, smoking, harmful alcohol consumption, physical inactivity, unhealthy dietary habits, and chronic stress.

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The interaction of multiple risk factors can substantially increase overall cardiovascular risk. For example, the coexistence of smoking, elevated blood pressure, and high cholesterol levels may result in a cardiovascular risk greater than that associated with each individual factor considered separately. Therefore, contemporary preventive approaches recommend comprehensive assessment of an individual's overall cardiovascular risk, for example, using the SCORE2 risk assessment system.

4. Preventive Measures. A substantial proportion of cardiovascular events can be prevented through effective control of modifiable risk factors. Primary prevention includes regular monitoring of blood pressure, blood cholesterol, and blood glucose levels; limiting salt intake (the WHO recommends consuming less than 5 g of salt per day); adopting a diet rich in vegetables, fruits, whole grains, and fish; engaging in regular physical activity, including at least 150 minutes of moderate-intensity exercise per week; smoking cessation; limiting alcohol consumption; and maintaining a healthy body weight.

Additional preventive measures include enrolling individuals at elevated cardiovascular risk in regular medical follow-up programmes and ensuring periodic health examinations.

Secondary prevention focuses on preventing complications and recurrent cardiovascular events in patients with established disease. It includes consistent adherence to prescribed pharmacological treatment, participation in appropriate rehabilitation programmes, and sustained lifestyle modifications.

Conclusion. Cardiovascular diseases remain a major medical and socioeconomic challenge. Since a substantial proportion of these conditions are associated with modifiable risk factors, primary prevention, promotion of healthy lifestyles, and early disease detection are essential strategies for reducing mortality and disability. The active involvement of primary healthcare physicians and the strengthening of public health education and awareness initiatives are of particular importance in reducing the burden of cardiovascular diseases.

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