

Cardiomyopathy.

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ANNOTATION

Cardiomyopathy is a group of diseases that affect the heart muscle and lead to structural and functional abnormalities of the heart. These conditions are not primarily caused by coronary artery disease, hypertension, or congenital heart defects. Cardiomyopathy can result in heart failure, arrhythmias, and sudden cardiac death. The main types include dilated, hypertrophic, restrictive, and arrhythmogenic cardiomyopathy. Early diagnosis and appropriate treatment are essential to improve patient outcomes and quality of life. This paper reviews the main types, causes, clinical manifestations, diagnostic methods, and treatment approaches of cardiomyopathy.

Keywords

Cardiomyopathy, heart muscle disease, heart failure, arrhythmia, cardiac dysfunction

Introduction.

Cardiomyopathy is a significant cause of morbidity and mortality worldwide. It affects individuals of all ages and can have both genetic and acquired origins. Advances in medical research have improved the understanding of the molecular and structural mechanisms underlying cardiomyopathy. However, the disease often remains undiagnosed until advanced stages. Understanding the clinical features and management strategies of cardiomyopathy is essential for improving patient outcomes and preventing severe complications.

Cardiomyopathy is a group of diseases that affect the heart muscle and lead to structural and functional abnormalities of the heart. Unlike other cardiovascular conditions, cardiomyopathy is not primarily caused by coronary artery disease, hypertension, or congenital heart defects. This condition can impair the heart's ability to pump blood effectively and may result in heart failure, arrhythmias, thromboembolic complications, and sudden cardiac death. Cardiomyopathy can affect people of all ages and may have both genetic and acquired origins.

There are several major types of cardiomyopathy, each with distinct characteristics. Dilated cardiomyopathy is the most common form and is characterized by enlargement of the heart chambers and reduced systolic function. Hypertrophic cardiomyopathy involves abnormal thickening of the myocardial walls, particularly the left ventricle, and is often inherited. Restrictive cardiomyopathy is marked by decreased ventricular compliance, leading to impaired diastolic filling while systolic function may remain relatively preserved. Arrhythmogenic cardiomyopathy primarily affects the right ventricle and is associated with fibrofatty replacement of myocardial tissue, which increases the risk of ventricular arrhythmias.

The causes of cardiomyopathy vary widely. Genetic mutations affecting cardiac muscle proteins play a significant role, especially in hypertrophic and some forms of dilated cardiomyopathy. Acquired causes include viral infections, chronic alcohol consumption, exposure to toxic substances, metabolic disorders, autoimmune diseases, and nutritional deficiencies. In many patients, the exact cause cannot be identified, and the condition is classified as idiopathic cardiomyopathy.

Clinical manifestations of cardiomyopathy depend on the type and severity of the disease. Common symptoms include shortness of breath, fatigue, chest pain, palpitations, dizziness, syncope, and peripheral edema. As the disease progresses, patients may develop chronic heart failure and life-threatening arrhythmias, significantly reducing quality of life.

Diagnosis of cardiomyopathy requires a comprehensive clinical evaluation and the use of advanced diagnostic techniques. Electrocardiography is useful for detecting rhythm and conduction abnormalities, while echocardiography remains the primary imaging method for assessing cardiac structure and function. Cardiac magnetic resonance imaging provides detailed information about myocardial tissue and fibrosis. In selected cases, genetic testing is recommended, particularly when a hereditary form is suspected.

Treatment of cardiomyopathy depends on the specific type and stage of the disease. Medical therapy commonly includes beta-blockers, angiotensin-converting enzyme inhibitors, diuretics, and antiarrhythmic medications. Device-based therapies, such as pacemakers and implantable cardioverter-defibrillators, are used to prevent sudden cardiac death in high-risk patients. In advanced stages, heart transplantation may be considered. Lifestyle modification, regular follow-up, and early intervention play a crucial role in improving prognosis.

Conclusion

Cardiomyopathy represents a complex group of cardiac disorders with diverse clinical presentations and outcomes. Early detection, accurate classification, and individualized treatment strategies are crucial for improving survival and quality of life. Continued research and increased awareness are necessary to enhance prevention, diagnosis, and therapeutic approaches for cardiomyopathy.

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