

**ISCHEMIC HEART DISEASE: CLASSIFICATION, DIAGNOSIS, AND
TREATMENT STRATEGIES**

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Annotation: Ischemic heart disease (IHD) remains one of the leading causes of morbidity and mortality worldwide, posing a significant burden on healthcare systems and society. This review article examines the current classification, diagnostic approaches, and treatment strategies for ischemic heart disease. The study highlights the pathophysiological mechanisms underlying myocardial ischemia and discusses the major clinical forms of the disease, including stable angina, unstable angina, and myocardial infarction. Modern diagnostic methods such as electrocardiography, cardiac biomarkers, echocardiography, stress testing, coronary angiography, and advanced imaging techniques are reviewed. Furthermore, contemporary treatment strategies, including lifestyle modification, pharmacological therapy, percutaneous coronary intervention, and coronary artery bypass grafting, are analyzed. Early diagnosis and evidence-based management are essential for improving patient outcomes and reducing cardiovascular mortality. The article emphasizes the importance of a multidisciplinary approach in the prevention, diagnosis, and treatment of ischemic heart disease.

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Keywords: Ischemic heart disease, coronary artery disease, myocardial ischemia, angina pectoris, myocardial infarction, diagnosis, electrocardiography, coronary angiography, pharmacotherapy, revascularization, cardiovascular diseases.

Introduction

Ischemic heart disease (IHD), also known as coronary artery disease (CAD), is a cardiovascular disorder characterized by an imbalance between myocardial oxygen supply and demand due to reduced coronary blood flow. It is one of the most prevalent non-communicable diseases and remains a major public health challenge globally. According to international health statistics, ischemic heart disease accounts for millions of deaths annually and significantly contributes to disability and reduced quality of life. The primary cause of IHD is atherosclerosis of the coronary arteries, which leads to narrowing or obstruction of blood vessels supplying the heart muscle. Various risk factors, including hypertension, diabetes mellitus, dyslipidemia, smoking, obesity, sedentary lifestyle, and genetic predisposition, contribute to the development and progression of the disease. Advances in medical science have improved the understanding of the pathogenesis, diagnosis, and treatment of ischemic heart disease. Modern diagnostic technologies enable early detection and accurate assessment of coronary artery involvement, while innovative therapeutic approaches have substantially improved survival rates and clinical outcomes. Despite these advances, IHD continues to represent a significant burden due to its high prevalence and associated complications. The aim of this article is to review the classification, diagnostic methods, and current treatment strategies for ischemic heart disease, providing an overview of contemporary approaches to patient management and cardiovascular risk reduction.

Materials and Methods

This review article was conducted through a comprehensive analysis of scientific literature related to ischemic heart disease (IHD). Relevant articles were identified

using major medical databases, including PubMed, Scopus, Web of Science, and Google Scholar. Publications from 2015 to 2025 were considered, with emphasis on peer-reviewed studies, clinical guidelines, systematic reviews, and meta-analyses. Keywords used during the literature search included “ischemic heart disease,” “coronary artery disease,” “myocardial ischemia,” “diagnosis of IHD,” “cardiac biomarkers,” “coronary angiography,” “pharmacological treatment,” “percutaneous coronary intervention,” and “coronary artery bypass grafting.” Articles published in English and containing relevant information regarding classification, diagnosis, and treatment strategies were included. Studies with insufficient data or lacking scientific relevance were excluded. The collected information was systematically analyzed and synthesized to provide an up-to-date overview of the current approaches to the diagnosis and management of ischemic heart disease.

Results

The literature review demonstrated that ischemic heart disease remains one of the leading causes of cardiovascular mortality worldwide. The disease is commonly classified into stable ischemic heart disease, acute coronary syndromes (unstable angina and myocardial infarction), and silent myocardial ischemia. Diagnostic evaluation of IHD has significantly improved with the development of advanced technologies. Electrocardiography remains the primary diagnostic tool for initial assessment, while cardiac biomarkers such as troponins provide high sensitivity and specificity for detecting myocardial injury. Non-invasive imaging modalities, including echocardiography, stress testing, computed tomography coronary angiography, and cardiac magnetic resonance imaging, contribute to accurate diagnosis and risk stratification. The review also revealed that treatment strategies have evolved considerably over recent decades. Lifestyle modification and risk factor control remain fundamental components of disease management. Pharmacological therapies, including antiplatelet agents, beta-blockers, statins, angiotensin-converting enzyme

inhibitors, and nitrates, effectively reduce symptoms and cardiovascular events. In patients with significant coronary artery obstruction, revascularization procedures such as percutaneous coronary intervention and coronary artery bypass grafting have demonstrated substantial improvements in survival and quality of life.

Discussion

The findings of this review highlight the multifactorial nature of ischemic heart disease and the importance of early diagnosis and comprehensive management. Advances in diagnostic methods have enabled clinicians to identify coronary artery disease at earlier stages, allowing timely intervention and prevention of adverse cardiovascular outcomes. Current evidence suggests that optimal treatment requires an individualized approach based on disease severity, comorbidities, and patient-specific risk factors. While pharmacological therapy remains the cornerstone of management, invasive procedures provide additional benefits in selected patients with advanced coronary artery disease. Furthermore, preventive strategies play a crucial role in reducing the global burden of ischemic heart disease. Public health initiatives aimed at smoking cessation, healthy nutrition, regular physical activity, and control of hypertension, diabetes, and dyslipidemia can significantly decrease disease incidence and mortality. Despite remarkable progress in cardiovascular medicine, ischemic heart disease continues to represent a major healthcare challenge. Future research should focus on personalized medicine, novel biomarkers, advanced imaging technologies, and innovative therapeutic approaches to further improve patient outcomes and reduce cardiovascular mortality worldwide.

Conclusion

Ischemic heart disease remains one of the most significant cardiovascular disorders and a leading cause of morbidity and mortality worldwide. The disease results primarily from atherosclerotic narrowing of the coronary arteries, leading to inadequate myocardial perfusion and oxygen supply. Advances in diagnostic technologies,

including cardiac biomarkers, non-invasive imaging techniques, and coronary angiography, have greatly improved the early detection and assessment of ischemic heart disease. Current treatment strategies involve a combination of lifestyle modification, pharmacological therapy, and revascularization procedures tailored to individual patient characteristics. Effective management of cardiovascular risk factors such as hypertension, diabetes mellitus, dyslipidemia, smoking, and obesity is essential for reducing disease progression and improving clinical outcomes. In addition, modern interventional and surgical techniques have significantly enhanced survival rates and quality of life among affected patients. A multidisciplinary and patient-centered approach remains crucial for the successful prevention, diagnosis, and treatment of ischemic heart disease. Continued research into novel diagnostic biomarkers, personalized medicine, and innovative therapeutic interventions may further contribute to reducing the global burden of cardiovascular disease in the future.

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