



HEART DISEASE

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Anatotion: *The cardiovascular system consists of the heart and blood vessels.[1] There is a wide array of problems that may arise within the cardiovascular system, for example, endocarditis, rheumatic heart disease, abnormalities in the conduction system, among others, cardiovascular disease (CVD) or heart disease refer to the following 4 entities that are the focus of this article. Coronary artery disease (CAD): Sometimes referred to as Coronary Heart Disease (CHD), results from decreased myocardial perfusion that causes angina, myocardial infarction (MI), and/or heart failure.*

Key word : *cardiovascular , heart , blood vessels , coronary , arterial disease.*

Introduction

The cardiovascular system consists of the heart and blood vessels.[1] There is a wide array of problems that may arise within the cardiovascular system, for example, endocarditis, rheumatic heart disease, abnormalities in the conduction system, among others, cardiovascular disease (CVD) or heart disease refer to the following 4 entities that are the focus of this article. Coronary artery disease (CAD): Sometimes referred to as Coronary Heart Disease (CHD), results from decreased myocardial perfusion that causes angina, myocardial infarction (MI), and/or heart failure. It accounts for one-third to one-half of the cases of CVD. Cerebrovascular disease (CVD): Including stroke and transient ischemic attack (TIA) Peripheral artery disease (PAD): Particularly arterial disease involving the limbs that may result in claudicationAortic atherosclerosis: Including thoracic and abdominal aneurysms

Etiology



Although CVD may directly arise from different etiologies such as emboli in a patient with atrial fibrillation resulting in ischemic stroke, rheumatic fever causing valvular heart disease, among others, addressing risks factors associated to the development of atherosclerosis is most important because it is a common denominator in the pathophysiology of CVD. The industrialization of the economy with a resultant shift from physically demanding to sedentary jobs, along with the current consumerism and technology-driven culture that is related to longer work hours, longer commutes, and less leisure time for recreational activities, may explain the significant and steady increase in the rates of CVD during the last few decades. Specifically, physical inactivity, intake of a high-calorie diet, saturated fats, and sugars are associated with the development of atherosclerosis and other metabolic disturbances like metabolic syndrome, diabetes mellitus, and hypertension that are highly prevalent in people with CVD. According to the INTERHEART study that included subjects from 52 countries, including high, middle, and low-income countries, 9 modifiable risks factors accounted for 90% of the risk of having a first MI: smoking, dyslipidemia, hypertension, diabetes, abdominal obesity, psychosocial factors, consumption of fruits and vegetables, regular alcohol consumption, and physical inactivity. It is important to mention that in this study 36% of the population-attributable risk of MI was accounted to smoking. Other large cohort studies like the Framingham Heart Study[7] and the Third National Health and Nutrition Examination Survey (NHANES III)[5] have also found a strong association and predictive value of dyslipidemia, high blood pressure, smoking, and glucose intolerance. Sixty percent to 90% of CHD events occurred in subjects with at least one risk factor. These findings have been translated into health promotion programs by the American Heart Association with emphasis on seven recommendations to decrease the risk of CVD: avoiding smoking, being physically active, eating healthy, and keeping normal blood pressure, body weight, glucose, and cholesterol levels.[8][9]



On the other hand, non-modifiable factors as family history, age, and gender have different implications. Family history, particularly premature atherosclerotic disease defined as CVD or death from CVD in a first-degree relative before 55 years (in males) or 65 years (in females) is considered an independent risk factor.[10] There is also suggestive evidence that the presence of CVD risk factors may differently influence gender.[4][7] For instance, diabetes and smoking more than 20 cigarettes per day had increased CVD risk in women compared to men. Prevalence of CVD increases significantly with each decade of life. The presence of HIV (human immunodeficiency virus),[13] history of mediastinal or chest wall radiation, microalbuminuria, increased inflammatory markers have also been associated with an increased rate and incidence of CVD. Pointing out specific diet factors like meat consumption, fiber, and coffee and their relation to CVD remains controversial due to significant bias and residual confounding encountered in epidemiological studies.

Evaluation

Thorough clinical history and physical exam directed but not limited to the cardiovascular system are the hallmarks for the diagnosis of CVD. Specifically, a history compatible with obesity, angina, decreased exercise tolerance, orthopnea, paroxysmal nocturnal dyspnea, syncope or presyncope, and claudication should prompt the clinician to obtain a more detailed history and physical exam and, if pertinent, obtain ancillary diagnostic test according to the clinical scenario (e.g., electrocardiogram and cardiac enzymes for patients presenting with chest pain). Besides a diagnosis prompted by clinical suspicion, most of the efforts should be oriented for primary prevention by targeting people with the presence of risk factors and treat modifiable risk factors by all available means. All patient starting at age 20 should be engaged in the discussion of CVD risk factors and lipid measurement. Several calculators that use LDL-cholesterol and HDL-cholesterol levels and the



presence of other risk factors calculate a 10-year or 30-year CVD score to determine if additional therapies like the use of statins and aspirin are indicated for primary prevention, generally indicated if such risk is more than ten percent.[10] Like other risk assessment tools, the use of this calculators have some limitations, and it is recommended to exert precaution when assessing patients with diabetes and familial hypercholesterolemia as their risk can be underestimated.

Enhancing Healthcare Team Outcomes

An interprofessional and patient-oriented approach can help to improve outcomes for people with cardiovascular disease as shown in patients with heart failure (HF) who had better outcomes when the interprofessional involvement of nurses, dietitians, pharmacists, and other health professionals was used (Class 1A). Similarly, positive results were obtained in people in an intervention group who were followed by an interprofessional team comprised of pharmacists, nurses and a team of different physicians. This group had a reduction in all-cause mortality associated with CAD by 76% compared to the control group.[53] Healthcare workers should educate the public on lifestyle changes and reduce the modifiable risk factors for heart disease to a minimum.

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