

Cardiovascular Disease and its Risk Factors

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Description

Cardiovascular Disease (CVD) is a class of diseases that involve the heart or blood vessels. CVD includes coronary artery diseases CAD such as angina and myocardial infarction commonly known as a heart attack. Other CVDs include stroke, heart failure, hypertensive heart disease, rheumatic heart disease, cardiomyopathy, abnormal heart rhythms, congenital heart disease, valvular heart disease, carditis, aortic aneurysms, peripheral artery disease, thromboembolic disease, and venous thrombosis.

The Underlying Mechanisms Vary Depending on the Disease

The average age of death from coronary artery disease in the developed world is around 80 while it is around 68 in the developing world. Diagnosis of disease typically occurs seven to ten years earlier in men as compared to women. Risk factors: There are many risk factors for heart diseases age, sex, tobacco use, physical inactivity, non-alcoholic fatty liver disease, excessive alcohol consumption, unhealthy diet, obesity, genetic predisposition and family history of cardiovascular disease, raised blood pressure hypertension, raised blood sugar diabetes mellitus raised blood cholesterol hyperlipidemia, undiagnosed celiac disease, psychosocial factors, poverty and low educational status, air pollution, and poor sleep. While the individual contribution of each risk factor varies between different communities or ethnic groups the overall contribution of these risk factors is very consistent. Genetics: Cardiovascular disease in a person's parents increases their risk by 3 fold and genetics is an important risk factor for cardiovascular diseases. Genetic cardiovascular disease can occur either as a consequence of single variant Mendelian or polygenic influences. There are more than 40 inherited cardiovascular diseases that can be traced to a single disease-causing DNA variant, although these conditions are rare. Age: Calcified heart of an older woman with cardiomegaly. Age is the most important risk factor in developing cardiovascular or heart diseases, with approximately a tripling of risk with each decade of life. Coronary fatty streaks can begin to form in adolescence. It is estimated that 82 percent of people who die of coronary heart disease are 65 and older Physical inactivity: Insufficient physical activity. Diet: High dietary intakes of saturated fat, trans-fats and salt and low intake

of fruits, vegetables and fish are linked to cardiovascular risk, although whether all these associations indicate causes is disputed. Frequent consumption of high-energy foods, such as processed foods that are high in fats and sugars, promotes obesity and may increase cardiovascular risk. The amount of dietary salt consumed may also be an important determinant of blood pressure levels and overall cardiovascular risk. There is evidence that higher consumption of sugar is associated with higher blood pressure and unfavorable blood lipids, and sugar intake also increases the risk of diabetes mellitus. High consumption of processed meats is associated with an increased risk of cardiovascular disease, possibly in part due to increased dietary salt intake. Alcohol: The relationship between alcohol consumption and cardiovascular disease is complex, and may depend on the amount of alcohol consumed. There is a direct relationship between high levels of drinking alcohol and cardiovascular disease. Drinking at low levels without episodes of heavy drinking may be associated with a reduced risk of cardiovascular disease, but there is evidence that associations between moderate alcohol consumption and protection from stroke are non-causal. At the population level, the health risks of drinking alcohol exceed any potential benefits. Celiac disease: Untreated celiac disease can cause the development of many types of cardiovascular diseases, most of which improve or resolve with a gluten-free diet and intestinal healing. However, delays in recognition and diagnosis of celiac disease can cause irreversible heart damage. Sleep: Not getting good sleep, in amount or quality, is documented as increasing cardiovascular risk in both adults and teens. Recommendations suggest that Infants typically need 12 or more hours of sleep per day, adolescent at least eight or nine hours, and adults seven or eight.

Health-Care Access and Quality Contribute to Socio-Economic

Socioeconomic disadvantage: Cardiovascular disease affects low- and middle-income countries even more than high-income countries. There is relatively little information regarding social patterns of cardiovascular disease within low- and middle-income countries, but within high-income countries low income and low educational status are consistently associated with greater risk of cardiovascular disease. Policies that have resulted in increased socio-economic inequalities have been associated

with greater subsequent socio-economic differences in cardiovascular disease implying a cause and effect relationship. Cardiovascular risk assessment: Existing cardiovascular disease or a previous cardiovascular event, such as a heart attack or stroke, is the strongest predictor of a future cardiovascular event. Age, sex, smoking, blood pressure, blood lipids and diabetes are important predictors of future cardiovascular disease in people who are not known to have cardiovascular disease. These measures, and sometimes others, may be combined into composite risk scores to estimate an individual's future risk of cardiovascular disease. Numerous risk scores exist although their respective merits are debated. Other diagnostic tests and biomarkers remain under evaluation but currently these lack clear-cut evidence to support their routine use. They include family history, coronary artery calcification score, high sensitivity C-reactive protein hs-CRP, ankle-brachial pressure index, lipoprotein subclasses and particle concentration, lipoprotein a, apolipoproteins A-I and B, fibrinogen, white blood cell count, homocysteine, N-terminal pro B-type natriuretic peptide NT-proBNP, and markers of kidney function. High blood phosphorus is also linked to an increased risk. Depression and traumatic stress: There is evidence that a mental health problem, in particular depression and traumatic stress, is linked to cardiovascular diseases. Whereas mental health problems are known to be associated with risk factors for cardiovascular diseases such as smoking, poor diet, and a sedentary lifestyle, these factors alone do not explain the increased risk of cardiovascular diseases seen in depression, stress, and anxiety. Medication: Blood pressure medication reduces cardiovascular disease in people at risk, irrespective of age, the baseline level of cardiovascular risk, or baseline blood pressure. The commonly-used drug regimens have similar efficacy in reducing the risk of all major cardiovascular events, although there may be differences between drugs in their ability to prevent specific outcomes. Larger reductions in blood pressure produce larger reductions in risk, and most people with high blood pressure

require more than one drug to achieve adequate reduction in blood pressure. Adherence to medications is often poor and while mobile phone text messaging has been tried to improve adherence, there is insufficient evidence that it alters secondary prevention of cardiovascular disease. Statins are effective in preventing further cardiovascular disease in people with a history of cardiovascular disease. As the event rate is higher in men than in women, the decrease in events is more easily seen in men than women. In those at risk, but without a history of cardiovascular disease primary prevention, statins decrease the risk of death and combined fatal and non-fatal cardiovascular disease. Niacin, fibrates and CETP Inhibitors, while they may increase HDL cholesterol do not affect the risk of cardiovascular disease in those who are already on statins. Fibrates lower the risk of cardiovascular and coronary events, but there is no evidence to suggest that they reduce all-cause mortality. Anti-diabetic medication may reduce cardiovascular risk in people with Type 2 Diabetes, although evidence is not conclusive.. Aspirin has been found to be of only modest benefit in those at low risk of heart disease as the risk of serious bleeding is almost equal to the benefit with respect to cardiovascular problems. In those at very low risk, including those over the age of 70, it is not recommended. The United States Preventive Services Task Force recommends against use of aspirin for prevention in women less than 55 and men less than 45 years old; however, in those who are older it is recommends in some individuals. The use of vasoactive agents for people with pulmonary hypertension with left heart disease or hypoxemic lung diseases may cause harm and unnecessary expense. Antibiotics for secondary prevention of coronary heart disease. Antibiotics may help patients with coronary disease to reduce the risk of heart attacks and strokes. However, the latest evidence suggests that antibiotics for secondary prevention of coronary heart disease are harmful with increased mortality and occurrence of stroke. So, the use of antibiotics is not currently supported for preventing secondary coronary heart disease.