

New Horizon in Medical Treatment of Coronary Artery Disease

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Coronary artery disease (CAD) remains the leading cause of mortality in most industrialized countries, although age-standardized mortality related to CAD has decreased by more than 40% during the last two decades. Half of this decline resulted from prevention and reduction in major risk factors, whereas the other half has been attributed to medical treatment and revascularization.

CAD is the result of atherosclerosis, with formation of plaques throughout the arterial system. Vascular inflammation may lead to disruption of the endothelium overlying a plaque and cause subsequent intravascular thrombosis. Symptoms related to atherosclerosis vary depending on the location and degree of stenosis of the vessels and the occurrence, site, and severity of plaque disruption. Coronary atherosclerosis may thus be asymptomatic or cause angina pectoris, myocardial infarction, heart failure, arrhythmias, and sudden death.

Medical management of atherosclerosis and its manifestation aims at retardation of progression of plaque formation, prevention of plaque rupture, and subsequent events and treatment of symptoms, when these occur as well as treatment of the sequelae of the disease. Revascularization by either percutaneous coronary intervention (PCI) or coronary artery bypass surgery (CABG) is performed as treatment of flow-limiting coronary stenosis to reduce myocardial ischaemia and its manifestations.

All patients with atherosclerosis, including patients with angina pectoris, benefit from life-long drug therapy in addition to a healthy lifestyle. Optimal management of CAD includes: (i) appropriate lifestyle, i.e. no smoking, a healthy diet, weight control, and regular exercise; (ii) detection and treatment of diseases and conditions which increase the risk of atherosclerosis, in particular hypertension, diabetes, and hypercholesterolaemia; (iii) drug therapy to lower LDL cholesterol (statins) in subjects at high risk for new or recurrent atherosclerosis events; (iv) additional preventive therapy with aspirin, other anti-thrombotic agents, ACE-inhibitors, and β blockers in patients with known atherosclerosis; (v) symptomatic treatment with nitrates, β blockers, calcium channel blockers, and other anti-angina drugs; and (vi) revascularization by PCI or CABG in selected patients.

Finally, patient preference must be carefully weighed in the overall treatment selection. We should comply with the recommendations for optimal medical management of all patients with angina and stable CAD as well as optimal use of PCI and CABG in appropriately selected patients.