Optimal Drug Regimen in Asymptomatic Patients with High Calcium Score in CT

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The presence and extent of coronary artery calcium can predict the presence of coronary artery disease, but generally it is a better marker of the extent of coronary atherosclerosis than the severity of stenosis. Positive associations have been proven between coronary calcium scores and histologic, intracoronary ultrasonic, and angiographic measures of coronary artery atherosclerosis and plaque burden. Coronary artery calcium detected by CT is highly sensitive for the presence of ≥50 percent angiographic stenosis. However, the absence of CAC is highly predictive of the absence of greater than 50 percent coronary artery stenosis. Patients with extensive coronary artery calcium are likely to have a large burden of noncalcified plaques. Thus, patients with high calcium scores have a high likelihood of plaques that are prone to rupture. There is sufficient evidence that calcium score has prognostic value in asymptomatic individuals especially those at intermediate risk. Coronary artery calcium which is predictive of long-term coronary risk in asymptomatic patients raises the question about possible therapy for regression of coronary artery calcium or primary prevention of cardiovascular events. The effect of statins and other therapies on coronary artery calcium progression and patient outcomes has been evaluated in a number of trials. The effects on coronary artery calcium progression have been conflicting and there is as yet no clear evidence of improvement in clinical outcomes. Aspirin, calcium channel blockers, estrogen, testosterone, bisphosphonate, and aged garlic have been administered in a number clinical trials without definite treatment effects; therefore, prospective randomized trials with larger number of participants are needed to confirm their efficacy and safety in reducing coronary artery calcium score and cardiovascular events. With the results of the up-to-date trials, instituting pharmacologic therapy to prevent coronary heart disease based solely upon the presence of coronary artery calcium should be reevaluated.