Calcium score, coronary artery disease extent and severity, and clinical outcomes among low Framingham risk patients with low vs high lifetime risk: results from the CONFIRM registry.

Abstract:

Short-term risk scores, such as the Framingham risk score (FRS), frequently classify younger patients as low risk despite the presence of uncontrolled cardiovascular risk factors. Among patients with low FRS, estimation of lifetime risk is associated with significant differences in coronary arterial calcium scores (CACS); however, the relationship of lifetime risk to coronary atherosclerosis on coronary CT angiography (CCTA) and prognosis has not been studied. We evaluated asymptomatic 20-60-year-old patients without diabetes or known coronary artery disease (CAD) within an international CT registry who underwent >=64-slice CCTA. Patients with low FRS (≤39%) lifetime CAD risk, and compared for the presence and severity of CAD and prognosis for death, myocardial infarction, and late coronary revascularization (>90 days post CCTA). 1,863 patients of mean age of
47 years were included, with 48% of the low FRS patients at high lifetime risk. Median follow-up was 2.0 years. Comparing low-to-high lifetime risk, respectively, the prevalence of any CAD was 32% vs 41% (P=50% stenosis was 7.4% vs 9.6% (P = .09). For those with CAD, subjects at low vs high lifetime risk had lower CACS (median 12 [IQR 0-94] vs 38 [IQR 0.05-144], P = .02) and less purely calcified plaque, 35% vs 45% (P< .001). Prognosis did not differ due to low number of events. Assessment of lifetime risk among patients at low FRS identified those with the increase in CAD prevalence and severity and a higher proportion of calcified plaque.