Usefulness of Coronary Computed Tomography Angiography to Predict Mortality and Myocardial Infarction Among Caucasian, African and East Asian Ethnicities (from the CONFIRM [Coronary CT Angiography Evaluation for Clinical Outcomes: An International Multicenter] Registry).

Summary / Zusammenfassung

Abstract

Studies examining coronary computed tomographic angiography (CCTA) have demonstrated increased mortality related to coronary artery disease (CAD) severity but are limited to relatively nondiverse ethnic populations. The aim of this study was to evaluate the prognostic significance of CAD on CCTA according to ethnicity for patients without previous CAD in a prospective international CCTA registry of 11 sites (7 countries) who underwent 64-slice CCTA from 2005 to 2010. CAD was defined as any coronary artery atherosclerosis and obstructive CAD as \( \geq 50\% \) stenosis. All-cause mortality and nonfatal myocardial infarction (MI) were assessed by ethnicity using Kaplan-Meier and Cox proportional hazards, controlling for baseline risk factors, medications, and revascularization. A total of 16,451 patients of mean age 58 years (55% men) were followed over a median of 2.0 years (interquartile range 1.4 to 3.2). Patients were 60.1% Caucasian, 34.4% East Asian, and 5.5% African. Death or MI occurred in 0.5% (38 of 7,109) among patients with no CAD, 1.6% (91 of 5,600) among those with nonobstructive CAD, and 3.8% (142 of 3,742) among those with \( \geq 50\% \) stenosis (p <0.001 among all groups). The annualized incidence of death or MI comparing obstructive to no obstructive CAD among Caucasians was 2.2% versus 0.7% (adjusted hazard ratio [aHR] 2.77, 95% confidence interval [CI] 1.73 to 4.43, p <0.001), among Africans 4.8% versus 1.1% (aHR 6.25, 95% CI 1.12 to 34.97, p = 0.037), and among East Asians 0.8% versus 0.1% (aHR 4.84, 95% CI 2.24 to 10.9, p <0.001). Compared to other ethnicities, East Asians had fewer than expected events (aHR 0.25, 95% CI 0.16 to 0.38, p <0.001). In conclusion, the presence and severity of CAD visualized by CCTA predict death or MI across 3 large ethnicities, whereas normal results on CCTA identify patients at very low risk.

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