The predictive value of coronary computed tomographic angiography (cCTA) in subjects without chest pain syndrome (CPS) has not been established. We investigated the prognostic value of coronary artery disease detection by cCTA and determined the incremental risk stratification benefit of cCTA findings compared with clinical risk factor scoring and coronary artery calcium scoring (CACS) for individuals without CPS. An open-label, 12-center, 6-country observational registry of 27,125 consecutive patients undergoing cCTA and CACS was queried, and 7,590 individuals without CPS or history of coronary artery disease met the inclusion criteria. All-cause mortality and the composite of all-cause mortality and nonfatal myocardial infarction were measured. During a median follow-up of 24 months (interquartile range, 18-35 months), all-cause mortality occurred in 136 individuals. After risk adjustment, compared with individuals without evidence of coronary artery
disease by cCTA, individuals with obstructive 2- and 3-vessel disease or left main coronary artery disease experienced higher rates of death and composite outcome (P<0.05 for both). Both CACS and cCTA significantly improved the performance of standard risk factor prediction models for all-cause mortality and the composite outcome (likelihood ratio P<0.05 for all), but the incremental discriminatory value associated with their inclusion was more pronounced for the composite outcome and for CACS (C statistic for model with risk factors only was 0.71; for risk factors plus CACS, 0.75; for risk factors plus CACS plus cCTA, 0.77). The net reclassification improvement resulting from the addition of cCTA to a model based on standard risk factors and CACS was negligible. Although the prognosis for individuals without CPS is stratified by cCTA, the additional risk-predictive advantage by cCTA is not clinically meaningful compared with a risk model based on CACS. Therefore, at present, the application of cCTA for risk assessment of individuals without CPS should not be justified.