Coronary computed tomographic angiography as a gatekeeper to invasive diagnostic and surgical procedures: results from the multicenter CONFIRM (Coronary CT Angiography Evaluation for Clinical Outcomes: an International Multicenter) registry.

This study sought to examine patterns of follow-up invasive coronary angiography (ICA) and revascularization (REV) after coronary computed tomography angiography (CCTA). CCTA is a noninvasive test that permits direct visualization of the extent and severity of coronary artery disease (CAD). Post-CCTA patterns of follow-up ICA and REV are incompletely defined. We examined 15,207 intermediate likelihood patients from 8 sites in 6 countries; these patients were without known CAD, underwent CCTA, and were followed up for 2.3 ± 1.2 years for all-cause mortality. Coronary artery stenosis was judged as obstructive when \( \geq 50\% \) stenosis was present. A multivariable logistic regression was used to estimate ICA use. A Cox proportional hazards model was used to estimate all-cause mortality. During follow-up, ICA rates for patients with no CAD to mild CAD according to CCTA were low (2.5% and 8.3%), with
similarly low rates of REV (0.3% and 2.5%). Most ICA procedures (79%) occurred <=3 months of CCTA. Obstructive CAD was associated with higher rates of ICA and REV for 1-vessel (44.3% and 28.0%), 2-vessel (53.3% and 43.6%), and 3-vessel (69.4% and 66.8%) CAD, respectively. For patients with <50% stenosis, early ICA rates were elevated; over the entirety of follow-up, predictors of ICA were mild left main, mild proximal CAD, respectively, or higher coronary calcium scores. In patients with <50% stenosis, the relative hazard for death was 2.2 (p = 0.011) for ICA versus no ICA. Conversely, for patients with CAD, the relative hazard for death was 0.61 for ICA versus no ICA (p = 0.047). These findings support the concept that CCTA may be used effectively as a gatekeeper to ICA.