Prognostic value of coronary vessel dominance in relation to significant coronary artery disease determined with non-invasive computed tomography coronary angiography

Summary / Zusammenfassung
AIMS: Limited information is available regarding the relationship between coronary vessel dominance and prognosis. Therefore, the purpose of this study was to determine the prognostic value of coronary vessel dominance in relation to significant coronary artery disease (CAD) in patients referred for computed tomography coronary angiography (CTA).

METHODS AND RESULTS: The study population consisted of 1425 patients (869 men, 57 ± 12 years) referred for CTA. To evaluate the impact of vessel dominance and significant CAD on CTA on outcome, patients were followed during a median period of 24 months for the occurrence of non-fatal myocardial infarction and all-cause mortality. The presence of a left dominant system was identified as a significant predictor for non-fatal myocardial infarction and all-cause mortality (HR: 3.20; 95% CI: 1.67-6.13, P < 0.001) and had incremental value over baseline risk factors and severity of CAD on CTA. In addition, in the subgroup of patients with significant CAD on CTA, patients with a left dominant system had a worse outcome compared with patients with a right dominant system (cumulative event rates: 9.5% and 35% at 3-year follow-up for a right and left dominant coronary artery system, respectively, log-rank P < 0.001).

CONCLUSIONS: The presence of a left dominant system was identified as an independent predictor of non-fatal myocardial infarction and all-cause mortality, especially in patients with significant CAD on CTA. Therefore, the assessment of coronary vessel dominance on CTA may further enhance risk stratification beyond the assessment of significant CAD on CTA.


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