Prognostic performance of low-dose coronary CT angiography with prospective ECG triggering

Summary / Zusammenfassung
Objective To assess the prognostic value of low-dose 64-slice coronary CT angiography (CCTA) using prospective ECG triggering in a patient population with known or suspected coronary artery disease (CAD).
Design Longitudinal follow-up study.
Setting Tertiary referral cardiac imaging centre.
Patients 434 consecutive patients who were referred for evaluation of CAD by CCTA.
Methods The presence, distribution and severity of coronary lesions (non-obstructive <50% vs obstructive $\geq 50\%$ luminal narrowing) were recorded by low-dose prospective ECG-triggered CCTA for each patient. The prognostic value of low-dose CCTA to predict major adverse cardiac events, defined as cardiac death, non-fatal myocardial infarction, or the need for revascularisation, was assessed using multivariate Cox regression analysis. Each person was followed up by telephone interviews and/or on the basis of clinical records. Thirty-eight early revascularised patients were excluded from outcome analysis.
Results Completely normal coronary arteries were documented in 171 patients (47%), while exclusively non-obstructive lesions were found in 66 (18%), and obstructive coronary lesions were diagnosed in 130 patients (35%). A mean follow-up of 47616 weeks was obtained. The first-year event rate was 0% in patients with normal coronary arteries on CCTA but increased to 3% and 26% in patients with non-obstructive and obstructive coronary artery lesions, respectively. In multivariate Cox regression analysis, a significant predictor of events was the presence of obstructive or any coronary lesions. Mean effective radiation dose was 1.860.6 mSv.
Conclusions These data document an excellent prognostic performance of low-dose CCTA.
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