Titel des Beitrags:
Carotid intima-media thickness progression to predict cardiovascular events in the general population (the PROG-IMT collaborative project): a meta-analysis of individual participant data.

Abstract:
Carotid intima-media thickness (cIMT) is related to the risk of cardiovascular events in the general population. An association between changes in cIMT and cardiovascular risk is frequently assumed but has rarely been reported. Our aim was to test this association. We identified general population studies that assessed cIMT at least twice and followed up participants for myocardial infarction, stroke, or death. The study teams collaborated in an individual participant data meta-analysis. Excluding individuals with previous myocardial infarction or stroke, we assessed the association between cIMT progression and the risk of cardiovascular events (myocardial infarction, stroke, vascular death, or a combination of these) for each study with Cox regression. The log hazard
ratios (HRs) per SD difference were pooled by random effects meta-analysis. Of 21 eligible studies, 16 with 36,984 participants were included. During a mean follow-up of 7.0 years, 1519 myocardial infarctions, 1339 strokes, and 2028 combined endpoints (myocardial infarction, stroke, vascular death) occurred. Yearly cIMT progression was derived from two ultrasound visits 2-7 years (median 4 years) apart. For mean common carotid artery intima-media thickness progression, the overall HR of the combined endpoint was 0.97 (95% CI 0.94-1.00) when adjusted for age, sex, and mean common carotid artery intima-media thickness, and 0.98 (0.95-1.01) when also adjusted for vascular risk factors. Although we detected no associations with cIMT progression in sensitivity analyses, the mean cIMT of the two ultrasound scans was positively and robustly associated with cardiovascular risk (HR for the combined endpoint 1.16, 95% CI 1.10-1.22, adjusted for age, sex, mean common carotid artery intima-media thickness progression, and vascular risk factors). In three studies including 3439 participants who had four ultrasound scans, cIMT progression did not correlate between occasions (reproducibility correlations between r=-0.06 and r=-0.02). The association between cIMT progression assessed from two ultrasound scans and cardiovascular risk in the general population remains unproven. No conclusion can be derived for the use of cIMT progression as a surrogate in clinical trials. Deutsche Forschungsgemeinschaft.

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