Carotid intima-media thickness (CIMT) is a marker of subclinical organ damage and predicts cardiovascular disease (CVD) events in the general population. It has also been associated with vascular risk in people with diabetes. However, the association of CIMT change in repeated examinations with subsequent CVD events is uncertain, and its use as a surrogate end point in clinical trials is controversial. We aimed at determining the relation of CIMT change to CVD events in people.
with diabetes. In a comprehensive meta-analysis of individual participant data, we collated data from
3,902 adults (age 33-92 years) with type 2 diabetes from 21 population-based cohorts. We calculated
the hazard ratio (HR) per standard deviation (SD) difference in mean common carotid artery
intima-media thickness (CCA-IMT) or in CCA-IMT progression, both calculated from two examinations
on average 3.6 years apart, for each cohort, and combined the estimates with random-effects
meta-analysis. Average mean CCA-IMT ranged from 0.72 to 0.97 mm across cohorts in people with
diabetes. The HR of CVD events was 1.22 (95% CI 1.12-1.33) per SD difference in mean CCA-IMT,
after adjustment for age, sex, and cardiometabolic risk factors. Average mean CCA-IMT progression
in people with diabetes ranged between -0.09 and 0.04 mm/year. The HR per SD difference in mean
CCA-IMT progression was 0.99 (0.91-1.08). Despite reproducing the association between CIMT level
and vascular risk in subjects with diabetes, we did not find an association between CIMT change and
vascular risk. These results do not support the use of CIMT progression as a surrogate end point in
clinical trials in people with diabetes.