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BIOMARKERS

# Extended predictive value of D-dimer

Plasma levels of the fibrin degradation product D-dimer are indicative of hypercoagulability and thrombotic events. However, the value of this biomarker in predicting events beyond 5 years and its association with other risk factors is unclear. Simes *et al.* now show that D-dimer levels predict long-term risk of cardiovascular events and death in patients with stable coronary disease, independently of and in addition to traditional risk factors and biomarkers. D-Dimer levels also predict cancer incidence and mortality in this patient cohort.

Simes *et al.* analysed data from 7,863 patients with myocardial infarction or unstable angina who had participated in the LIPID trial. D-Dimer levels were measured ≥5 months after the acute coronary syndrome, that is, after the period of hypercoagulability. Higher D-dimer levels were associated with traditional cardiovascular risk factors at baseline, including old age, history of hypertension, and high levels of B-type natriuretic peptide. During the first 6 years of follow-up, high D-dimer levels were associated with significantly increased risks of major coronary and cardiovascular events and with venous thromboembolism compared with low D-dimer levels (all $P < 0.001$), even after adjustment for traditional cardiovascular risk factors. At 16 years of follow-up, higher D-dimer levels were an independent predictor of all-cause mortality (HR 1.59, $P < 0.001$), cardiovascular mortality (HR 1.61, $P < 0.001$), cancer mortality (HR 1.54, $P < 0.001$), noncardiovascular and noncancer mortality (HR 1.57, $P < 0.001$), and cancer incidence (HR 1.16, $P = 0.02$). Inclusion of D-dimer level increased the net reclassification index for all-cause mortality by 4.0 and for venous thromboembolism by 13.6. "These results support an association of D-dimer with fatal events across multiple diseases and demonstrate that this link extends beyond 10 years' follow-up," state Simes and colleagues, who conclude that D-dimer levels should be considered in risk prediction tools and clinical management decisions.

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**ORIGINAL ARTICLE** Simes, J. *et al.* D-dimer predicts long-term cause-specific mortality, cardiovascular events and cancer in stable coronary heart disease patients: the LIPID study. *Circulation* http://dx.doi.org/10.1161/CIRCULATIONAHA.117.029901 (2018)