Research

LDL-C–Guided Statin Treatment in Borderline CVD Risk

Among individuals with the same 10-year absolute risk (AR10) of atherosclerotic cardiovascular disease (CVD), those with higher levels of low-density lipoprotein cholesterol (LDL-C) experience greater absolute risk reduction from statin therapy. Kohli-Lynch and coauthors estimated the cost-effectiveness of statin treatment across ranges of age, sex, AR10, and LDL-C levels using data from the 1999-2014 US National Health and Nutrition Examination Surveys. Prescribing statins to individuals aged 40 years at baseline with borderline AR10 (5.0% to 7.4%) and LDL-C levels of 130 to 189 mg/dL would be cost-saving, and treating all individuals with AR10 of at least 5.0% would be highly cost-effective ($33 558 per quality-adjusted life-year) and would prevent the most atherosclerotic CVD events. Within age, AR10, and sex categories, individuals with higher baseline LDL-C levels gained more quality-adjusted life-years from statin therapy.

Mental Stress–Induced Endothelial Dysfunction in CAD

The prognostic significance of transient endothelial dysfunction induced by mental stress is unknown. Lima and coauthors studied the association of mental stress–induced endothelial dysfunction, assessed by brachial artery flow-mediated vasodilation, with adverse outcomes among 569 patients with stable coronary artery disease (CAD). Transient decreases in flow-mediated vasodilation with mental stress was associated with increased risk of cardiovascular death, myocardial infarction, unstable angina, and heart failure hospitalization over a median follow-up period of 3 years, suggesting a possible mechanism through which psychological stress may affect outcomes in patients with CAD.

Troponin Levels, LV Function, and Incident HF in Older Adults

The association of high-sensitivity cardiac troponin T (hs-cTnT) with left ventricular (LV) systolic and diastolic function is unclear. In an analysis of 4111 participants from the Atherosclerosis Risk in Communities Study without cardiovascular disease at baseline, Myhre and coauthors demonstrated that hs-cTnT was detectable in 3946 participants (96.0%). Higher hs-cTnT levels were associated with greater LV mass index, worse diastolic function, and greater left atrial volume index but were not associated with measures of LV systolic function. Elevated hs-cTnT concentration and diastolic dysfunction were additive risk factors for subsequent development of heart failure (HF).

Value of GLS to Predict Chemotherapy-Induced Cardiotoxicity

Echocardiographic left ventricular global longitudinal strain (GLS) detects early subclinical ventricular dysfunction, but its predictive accuracy in identifying early cancer therapy-related cardiac dysfunction (CTRCD) is uncertain. Oikonomou and coauthors performed a systematic review and meta-analysis of 21 studies comprising 1782 patients with cancer, among whom the incidence of CTRCD ranged from 9.3% to 43.8%. Measurement of GLS after initiation of anthracyclines with or without trastuzumab had good prognostic performance for subsequent CTRCD. However, risk of bias in the original studies, publication bias, and limited data on the incremental value of GLS and its optimal cutoff values highlight the need for larger prospective multicenter studies.

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