Calcium Scoring to Refine Cardiovascular Risk Prediction?

A meta-analysis suggests improvement in discrimination is modest.

Coronary artery calcium (CAC) scores can be used to refine cardiovascular (CV) risk prediction, but is the incremental benefit sufficient to use CAC scores in primary prevention? In this meta-analysis, investigators identified six studies that reported the incremental value of CAC scores in CV risk prediction over CV risk determined by using calculators recommended in national guidelines alone. Studies varied in size (470–5185 participants), mean patient age (50–75), and percentage of women enrolled (38%–59%).

Overall, CAC scores increased ability to identify CV risk. Participants deemed to be low risk by CV risk calculators, but who were reclassified as intermediate-to-high risk after CAC scoring, had a 4% to 14% chance of experiencing adverse CV events during follow-up, which ranged from 5 to 10 years. Conversely, among those deemed to be intermediate-to-high risk by CV risk calculators, but low risk after CAC scoring, 1% to 9% experienced adverse CV events during follow-up.

COMMENT

In this meta-analysis, the authors found that CAC scoring added modestly to traditional clinical risk scores for CV disease prediction. However, editorialists point out the disadvantages of testing, including a small dose of radiation, cost (including the cost of downstream testing), and risk for unanticipated incidental findings. They call for outcomes studies that could help us assess the tradeoffs involved and to understand whether, and for whom, calcium scoring would improve cardiovascular outcomes.

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