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MEDIA RELEASE

CALCIUM SCORING MAY BENEFIT THOSE AT MEDIUM RISK OF CARDIOVASCULAR DISEASE

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A CARDIOVASCULAR disease risk assessment tool which is not currently covered by the Australian Medical Benefits Scheme could be used to identify a “considerable number” of people who could benefit from statin treatment as primary prevention, according to the authors of research published online today by the *Medical Journal of Australia*.

Coronary artery calcium is a sensitive marker of subclinical coronary atherosclerosis, and calcium scoring is an accepted re-classification tool when assessing risk in middle-aged people, according to the authors, led by Professor Thomas Marwick, Director of the Baker Heart and Disease Institute.

“A zero calcium score indicates that the risk of a cardiovascular event is lower than 0.5% per year, while the risk reduction achieved by statin therapy in asymptomatic people with calcium scores of 100 or more is similar to the benefit of statins prescribed as secondary prevention,” Marwick and colleagues wrote.

Fewer than 30% of people in Australia at high risk of a primary cardiovascular event receive guideline-recommended statin therapy.

“The National Vascular Disease Prevention Alliance (NVDPA) guidelines for managing absolute cardiovascular disease risk were most recently updated in 2012, and they differ in important details from overseas guidelines,” Marwick and colleagues wrote.

“Firstly, the Australian absolute cardiovascular disease risk (ACVDR) calculator, used to select patients for primary prevention statin therapy, is a locally calibrated version of the Framingham risk equation, which has been superseded in the United States by the pooled cohort equation (PCE).

“Secondly, the definition of intermediate risk, the threshold for considering statin therapy, is lower in US guidelines (10-year risk, 7.5% – < 20%) than in Australian guidelines (5-year risk, 10–15%).

“Further, the Australian guidelines do not mention computed tomography (CT) coronary artery calcium scoring. US guidelines include calcium scoring as a decision aid, recommending statin therapy for people over 55 with non-zero calcium scores and for anybody with scores of 100 or more; they recommend not initiating statins for people with zero calcium scores.”

Marwick and colleagues analysed data from the Coronary Artery calcium score: Use to Guide management of Hereditary Coronary Artery Disease (CAUGHT-CAD) trial (ACTRN 12614001294640), a randomised controlled trial assessing the utility of coronary artery calcium scoring for guiding risk evaluation and primary prevention statin therapy for patients with family histories of early onset coronary artery disease (CAD).

“We have identified two problems with the assessment of cardiovascular disease risk according to Australian guidelines,” Marwick and colleagues found.

“First, the statin treatment threshold (5-year risk of 10%) is higher than overseas and excludes many patients with both family histories of early onset CAD and subclinical atherosclerosis.

“Second, all the cardiovascular risk tools we examined were moderately sensitive for identifying people with coronary artery calcium, but the Australian absolute cardiovascular disease risk (ACVDR) calculator was among the least sensitive in this regard.

“As cardiovascular event rates for people with family histories of early onset CAD and coronary calcification exceed those associated with US guideline-defined intermediate risk thresholds, our findings suggest that Australian patients are undertreated by international standards. However, the ACVDR identifies people with coronary artery calcium poorly, so that lowering the treatment threshold alone would lead to unnecessary treatment for a considerable number of patients.

“Our data support the Cardiac Society of Australia and New Zealand position statement that calcium scores are most helpful in patients at intermediate 10-year risk (10–20%).

“We propose a 5-year ACVDR risk of 5% as a suitable threshold for coronary artery calcium scoring for patients with family histories of early onset CAD.

"Risk estimation is central to primary prevention of cardiovascular disease. Australian guidelines for statin therapy minimise overtreatment, but can also lead to not treating patients with family histories of early onset CAD," Marwick and colleagues concluded.

"Because the prediction and management of coronary risk (rather than other events) is the main driver of clinical decision making in those with a family history of early onset CAD, calcium scoring may help personalise the application of the ACVDR calculator to this large and heterogenous group of patients.

"Coronary artery calcium scores could be used to re-classify risk in one-half of our sample, and could change decisions about statin treatment in 41%."

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