

Lecture Abstract or Synopsis for publication

IMPACT OF THE CORONARY ARTERY CALCIUM SCORE ON PATIENT SELECTION FOR STATIN THERAPY

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Abstract

Patient selection for primary prevention statin therapy has long been founded on the use of traditional risk scores to estimate a patient's hazard for future atherosclerotic cardiovascular events. Yet, this process has an important inherent limitation. Traditional risk scores rely on a single measurement in time of a handful of risk factors and are therefore incapable of fully accounting for a patient's prior lifetime risk exposure. Comparatively, coronary artery calcium (CAC) scoring integrates a patient's risk exposure to date by quantifying their cumulative atherosclerotic burden. Not surprisingly, multiple studies have shown that CAC improves the accuracy of cardiovascular risk prediction above traditional risk scores. Even more powerfully, the absence of CAC (a CAC of zero) has been shown repeatedly to confer a very low risk of future cardiovascular events over a period of at least 10 years.

The widespread acceptance of CAC for patient selection of statin therapy has been tempered by the lack of a randomized controlled trial proving benefit. In the absence of randomized data, observational data continues to grow, though, that CAC is able to optimally select patients most likely to confer benefit from statins. Most recently, our group has shown that in a propensity weighted sample of 13,644 primary prevention patients, CAC presence and severity helped stratify patients most likely to have reduced cardiovascular events with statin therapy. Patients without any CAC showed no benefit from statin therapy over a nearly 10-year follow-up in the primary analysis.

In this lecture, we will review the current state of the evidence and guidelines for incorporating the CAC score into patient selection for statin therapy, including our recent study results. Along the way, important limitations and future directions will be addressed.

Keywords

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