**CALCIUM SCORING - WHERE DO WE STAND IN 2018?**
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Coronary artery calcium score (CACS) testing has been studied for 30+ yrs with extensive evidence supporting it use for identifying coronary atherosclerosis, assessing patient risk and guiding patient management. CACS is a simple non-invasive test which requires no patient prep, can be performed within several seconds, is easily interpretable and can be performed with very low (<1mSv) radiation exposure using modern scanners. It has been studied primarily in the asymptomatic population without prior history of coronary artery disease (CAD) but also has potential applications in symptomatic patients at low to intermediate pre-test likelihood for CAD. CACS reclassifies risk beyond clinical risk models alone such as the Framingham Risk Score or Adult Treatment Panel III. A CACS of 0 predicts a very low annual risk for major adverse cardiac events in both asymptomatic (0.47% over 4.2yrs) and symptomatic (0.45%/yr) patients thereby identifying a large group (50-60%) unlikely to benefit from further cardiac testing. CACS also allows better discrimination as to which patients warrant statin therapy and this has been shown even within clinical groups recommended for statin therapy in the most recent ACC/AHA guidelines. Conversely, an abnormal CACS identifies patients at increased risk for cardiac events which increases rapidly with CACS severity. CACS testing influences both patient and physician behavior regarding statin and aspirin usage and is a motivation for reducing cardiac risk factors, and cost-effectively decreasing unnecessary downstream testing. A recent study by Chang et al comparing exercise treadmill testing and stress myocardial perfusion to CACS, showed CACS to be more effective at predicting outcome than functional testing even in patients with a normal functional test result. Due to the long follow-up period in this study, investigators determined the “warranty period” of a normal functional test as only 3-4yrs. Although a normal functional test predicts a favorable short term outcome, long term risk will be based on CACS severity thereby providing a potential window of opportunity for aggressive medical treatment before patients manifest ischemia or subsequent cardiac events.