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American College of Cardiology Publishes an Expedited Review – June 2005

Landmark Study Shows Coronary Calcium Determined by Electron Beam CT to Predict Coronary Events Independent of Standard Risk Factors, More Accurately Than Standard RISK Factors and CRP, and Refines Framingham Risk Stratification

Arad and co-workers at St. Francis Hospital on Long Island, NY have reported on a 4.3 year follow up study in 4,613 asymptomatic men and women age 50 to 70 years who underwent Electron Beam CT (EBT) coronary calcium scanning. These individuals represented a large prospective examination of individuals who fell into low, intermediate, and high Framingham risk.

Cardiac outcomes determined in these patients included need for revascularization, stroke, non fatal myocardial infarction, and cardiac death. Using a coronary calcium score of below 100 versus above 100 as the threshold between a mild and moderate coronary calcium score (Rumberger JA, et al: Electron Beam Computed Tomography and Coronary Artery Disease: Scanning for Coronary Artery Calcification. Mayo Clinic Proceedings 1996;71 (4):369-377), they found the relative risk for any cardiovascular event to be 9.6; for any coronary event to be 11.1; and, for infarction and sudden death along to be 9.2. Just to put things in perspective, the relative risk for high blood pressure versus normal blood pressure is 1.9 and for diabetes versus no diabetes it is 3.0. They found that the coronary calcium score improved risk prediction across all individuals whether they were at low (about 25%) of the adult population), intermediate (about 50% of the adult population), or high (about 25% of the population) risk estimates by Framingham scoring. EBT also significantly outperformed CRP, although an earlier paper from another group did indicate that both measures enhanced the predictive powers (Park R, et al: Calcium scores and C-reactive protein levels in predicting cardiovascular events in non-diabetic individuals. Circulation 2002;106:2073-2077)

Further data shown in the table to the right indicate that the relative risk increases consistently as the baseline coronary calcium score increases.

Copies of this paper as well as the other two noted are available to you at our website: www.healthwisecenter.com

Score	Number of Subjects	Event Rate (%)	Relative Risk
0	1,504	0.54	1.0
1-99	1,973	1.00	1.9
100-399	686	5.5	10.2
≥ 400	450	14	26.2

EBT Coronary Calcium Scores and All Coronary Disease Events

If you have specific questions about these data or wish to discuss a particular case or referral, please contact me directly at 614-652-5888.