RECLASSIFICATION OF CARDIOVASCULAR RISK WITH CORONARY CALCIUM SCORING IN SUBJECTS WITHOUT DOCUMENTED CORONARY HEART DISEASE: COMPARISON WITH RISK ASSESSMENT BASED ON REYNOLDS RISK SCORE

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Background: Unlike Framingham risk score (FRS), Reynolds risk score (RRS) predicts future coronary heart disease (CHD) while incorporating C-reactive protein (CRP) & family history. Coronary calcium scoring (CAC) has shown additive value over FRS but not RRS. We investigated if CAC leads to reclassification of RRS assessment in subjects without prior CHD.

Methods: A consecutive cohort of 811 nondiabetic subjects (mean age 54±8 years, 77% men) who underwent non contrast ECG-gated CAC scoring, was included. Agatston score was measured & CAC was classified as: none, mild (1-100), moderate (101-400) & severe > 400. CAC risk percentiles were calculated & classified as: low (0-25%), moderate (26-50 %), moderate-severe (51-75%) & high (> 75 %). RRS (10-year risk for CHD) was calculated, based on gender.

Results: The mean Agatston score & CRP were 99±319 & 2.2±3 mg/l. High density lipoprotein, low-density lipoprotein & triglycerides were 203±39, 58±17, 120±34 & 127±90 (mg/dl), respectively. There was a significant association between CAC scores/percentiles & RRS (Figures A & B, both p<0.001). 72% patients with Agatston score >400 & 88% patients with high CAC percentile had low/moderate RRS. Performing CAC identified additional subjects, at risk for future CHD, with high Agatston score (n=51, 6 %) or high CAC percentile (n=192, 24 %).

Conclusions: In primary prevention, RRS underestimates the number of subjects at risk of future CHD events; & addition of CAC potentially improves risk stratification.