CORONARY CALCIUM AND FRAMINGHAM RISK SCORE TRAJECTORIES: INSIGHTS FROM THE DALLAS HEART STUDY

Oral Contributions
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Background: Individual longitudinal trends in coronary calcium (CAC) and their association with Framingham risk scores (FRS) have not been well defined. We sought to describe CAC and FRS trajectories in a multi-ethnic cohort.

Methods: Age and sex specific CAC and FRS percentiles were determined at baseline and after 7 years in 1603 subjects without CVD or diabetes. At each time point, subjects were allocated into categories defined by <75th, 75th-90th and >90th percentiles for CAC and FRS, respectively.

Results: Baseline disagreement between CAC and FRS categories was 37.1%. Among discordant pairs, high CAC/low FRS was associated with higher CHD event rates than high FRS/low CAC (5.6% vs 2.8%; p=0.032). Serial CAC measurements were concordant (no change in category) in 76.6% of subjects; 11.4% moved upwards and 12% moved downwards. Among men ≥45 and women ≥55, 80% were concordant; 15.5% moved upwards and only 4.5% moved downwards. Overall, only 70% of subjects remained in the same FRS category. Change in FRS and CAC groups was discordant in 40.5% of subjects.

Conclusion: There is significant discordance between baseline CAC and FRS percentile categories, with CAC categories more closely associating with CHD risk. Approximately 90% will have a similar or higher CAC percentile 7 years later. This observation suggests that CAC percentile categorization can be used to predict individual CAC trajectories (figure). Modeling CAC trajectory may be useful for risk communication and timing of therapy initiation.