Coronary Artery Calcification and Framingham Risk Score to Predict Coronary Events in Subjects under Primary Prevention Care

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Background: It has been demonstrated that coronary artery calcification (CAC) predicts coronary events in asymptomatic subjects as well as in diabetic, hypertensive, elderly, patients with chronic renal failure and in different ethnic origin. The relevancy of CAC score in subjects under primary prevention care is not yet elucidated.

Objective: To study the contribution of CAC and Framingham risk score for risk stratification in participants of annual check-up program.

Methods: 652 consecutive subjects (mean age 55±7 range 41-76, 83%male) who consented to perform cardiac CT for CAC score had been recruited. Men above 40 and women above 50 years without coronary artery disease or diabetes were included. All underwent medical interview, physical examination, blood tests, stress test and 16-slice CT without contrast injection. Subjects and their physician were advised to treat risk factors according to the current guidelines. Coronary events, defined as acute MI or unstable angina which resulted in PCI or CABG, and cardiac death, were reported while a final phone call 7 years after the CT.

Results: 6 acute MI and 12 unstable AP were reported. None of the 327 subjects without detectable CAC experienced an event. Higher CAC score category was associated with higher rate of events while no significant difference was observed by Framingham risk groups:

CAC score	**Events**	**Framingham**	**Events**
0	0/327(0)*	***0-9***	9/397 (2)**
1-300	7/266(3)	***10-20***	8/232(3)
>300	12/59(20)	***>20***	1/23(4)
	P<.001		P=.601

*event /subjects(percent)

The association of CAC with events are highly significant also among the low Framingham category: ***0* - 0/243, ***1-300*** - 4/127(3%) and ***>300*** -5/27(19%) p <.001

Conclusion: CAC contributes to risk stratification of subjects under primary prevention care better than the Framingham score.