The role of coronary calcium score in predicting myocardial infarction
Morning well, afternoon hell

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Coronary artery calcium (CAC) score could be very useful in predicting myocardial infarction or cardiac death, in particular amongst those who are at intermediate risk of coronary events or in diabetic patients. Coronary artery calcium has been shown to be a better predictor of cardiovascular events than carotid intima-media thickness. Combining SPECT with CAC improves sensitivity and specificity for the detection of significant coronary artery calcium.

Figure 1 A 53-year-old woman without symptoms made an appointment for a preventive examination due to her positive family history (her father had a myocardial infarction at the age of 55) in the year 2008. She had a history of arterial hypertension, received beta-blockers and was a smoker. Physical examination: BP 180/100, heart rate 78, without any pathology. Laboratory: serum cholesterol level 6.08 mmol/l, ApoB 0.89 mmol/l, HDL-cholesterol 1.78 mmol/l, LDL-cholesterol 4.0 mmol/l, Lp(a) 0.024 mmol/l, glucose 5.6 mmol/l, fibrinogen 4.58 mmol/l. Within our study "CVD and relatives",1–8 she had an echo exam with normal systolic left ventricular function and SPECT with normal heart perfusion (Figures 1A, 1B).4,5 The coronary artery calcium score (Figure 1C) showed only small calcification on the left descending artery (LAD) (Agatson score 15). ACE inhibitors and a statin were recommended.
disease (CAD). The National Education Program Adult Treatment Panel III guidelines recommend CAC score as an option for advanced risk assessment in appropriately selected individuals.

The absence of a positive CAC score or a mild CAC score does not exclude the occurrence of myocardial infarction.

We present the case of a 53-year-old woman with an intermediate coronary risk score (smoking, hypertension, lipid disorders, positive family history), on medication (beta-blockers, ACE inhibitors, statins), who had only a mildly positive CAC score (Agatson 32), with a small calcification on the left coronary artery in an exam in the morning and had an acute myocardial infarction on the right coronary artery in the afternoon.

References

3. Godsland IF; on behalf of the PREDICT study investigators. Prospective evaluation of coronary artery calcium in predicting cardiovascular events in asymptomatic patients with type 2 diabetes. 77th European Atherosclerosis Congress April 27, 2008, Istanbul, Turkey.