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Risk prediction is improved by adding markers of subclinical organ damage to SCORE FREE

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Abstract

Aims

It is unclear whether subclinical vascular damage adds significantly to Systemic Coronary Risk Evaluation (SCORE) risk stratification in healthy subjects.

Methods and results

In a population-based sample of 1968 subjects without cardiovascular disease or diabetes not receiving any cardiovascular, anti-diabetic, or lipid-lowering treatment, aged 41, 51, 61, or 71 years, we measured traditional cardiovascular risk factors, left ventricular (LV) mass index, atherosclerotic plaques in the carotid arteries, carotid/femoral pulse wave velocity (PWV), and urine albumin/creatinine ratio (UACR) and followed them for a median of 12.8 years. Eighty-one subjects died because of cardiovascular causes. Risk of cardiovascular death was independently of SCORE associated with LV hypertrophy [hazard ratio (HR) 2.2 (95% CI 1.2–4.0)], plaques [HR 2.5 (1.6–4.0)], UACR \geq 90th percentile [HR 3.3 (1.8–5.9)], PWV > 12 m/s [HR 1.9 (1.1–3.3) for SCORE \geq 5% and 7.3 (3.2–16.1) for SCORE < 5%]. Restricting primary prevention to subjects with SCORE \geq 5% as well as subclinical organ damage, increased specificity of risk prediction from 75 to 81% ($P < 0.002$), but reduced sensitivity from 72 to 65% ($P = 0.4$). Broaden primary prevention from subjects with SCORE \geq 5% to include subjects with 1% \geq SCORE < 5% together with subclinical organ damage increased sensitivity from 72 to 89% ($P = 0.006$), but reduced specificity from 75 to 57% ($P < 0.002$) and positive predictive value from 11 to 8% ($P = 0.07$).

Conclusion

Subclinical organ damage predicted cardiovascular death independently of

SCORE and the combination may improve risk prediction.

Keywords: Risk stratification, SCORE, Atherosclerotic plaques, Albuminuria, Pulse wave velocity, Left ventricular hypertrophy

Topic:

atheroma

primary prevention

cardiovascular diseases

diabetes mellitus

cardiovascular disease risk factors

albumins

carotid arteries

left ventricle

left ventricular hypertrophy

creatinine

cardiovascular system

lipids

urine

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