

Carotid artery intima media thickness associates with skin autofluorescence in non-diabetic subjects without clinically manifest cardiovascular disease.

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Lutgers HL, Graaff R, de Vries R, Smit AJ, Dullaart RP.

Department of Endocrinology and Metabolism, University Medical Centre Groningen and University of Groningen, Groningen, The Netherlands.

Background: Skin autofluorescence (skin AF) is determined in part by accumulation of advanced glycation end products. Increased skin AF was shown previously to predict cardiovascular events independently of conventional risk factors. We determined the association of carotid artery intima media thickness (IMT), a marker of subclinical cardiovascular disease, with skin AF in subjects without diabetes or clinically manifest cardiovascular disease.

Methods: In a cross-sectional observational study, IMT, skin AF, lipids and apolipoproteins, C-reactive protein (CRP), insulin resistance and paraoxonase-1 activity were measured in 59 non-smoking, non-obese subjects without diabetes mellitus and cardiovascular disease (32 women; 12 subjects with metabolic syndrome (MetS)).

Results: In univariate analyses, skin AF was correlated with IMT ($r = 0.265$, $P = 0.042$), but not significantly with clinical factors, (apo)lipoproteins, CRP, insulin resistance and paraoxonase-1. In multiple linear regression analyses, IMT was determined independently by age ($\beta = 0.549$, $P < 0.001$), apo B ($\beta = 0.236$, $P = 0.022$) and skin AF ($\beta = 0.216$, $P = 0.035$). IMT was also associated with skin AF ($\beta = 0.213$, $P = 0.046$) in a model which included the presence of MetS.

Conclusions: IMT is positively related to skin AF, independently of clinical factors, (apo)lipoproteins and MetS, suggesting that skin AF represents a determinant of subclinical atherosclerosis. Increased skin AF may reflect early abnormalities in processes involved in atherosclerosis development.

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