



Skin autofluorescence as a noninvasive marker of vascular damage in patients with type 2 diabetes.

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OBJECTIVE: Advanced glycation end products (AGEs) are thought to have a role in the pathogenesis of diabetes complications. We recently reported the association between skin autofluorescence, as a measure of tissue AGE accumulation, and diabetic neuropathy in a selected diabetic population. In this study, we investigated the relation between skin autofluorescence and clinical variables including micro- and macrovascular complications in a type 2 diabetes primary care population. **RESEARCH DESIGN AND METHODS:** Clinical data and skin autofluorescence were obtained in the type 2 diabetes group (n = 973) and in a control group (n = 231). Skin autofluorescence was assessed by illumination of the lower arm with a fluorescent tube (peak intensity approximately 370 nm). **RESULTS:** Skin autofluorescence was significantly higher in type 2 diabetic patients compared with control subjects in each age category. Multiple regression analysis showed significant correlation of skin autofluorescence with age, sex, diabetes duration, BMI, smoking, HbA1c, plasma creatinine, HDL cholesterol, and albumin-to-creatinine ratio in the type 2 diabetes group ($R^2 = 25\%$) and with age and smoking in the control group ($R^2 = 46\%$). Skin autofluorescence was significantly higher in the type 2 diabetes group, with both micro- and macrovascular disease, compared with the group without complications and the group with only microvascular complications. **CONCLUSIONS:** This study confirms in a large group of type 2 diabetic patients that skin autofluorescence is higher compared with age-matched control subjects and is associated with the severity of diabetes-related complications. Skin autofluorescence reflecting vascular damage might be a rapid and helpful tool in the diabetes outpatient clinic for identifying diabetic patients who are at risk for developing complications.

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