

Risk factors for chronic transplant dysfunction and cardiovascular disease are related to accumulation of advanced glycation end-products in renal transplant recipients.

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BACKGROUND: Accumulation of advanced glycation end-products (AGEs) has been implicated in the pathogenesis of chronic transplant dysfunction and cardiovascular disease in renal transplant recipients. We aimed to investigate which factors are associated with tissue AGE accumulation in renal transplant recipients. **METHODS:** The AGE accumulation was assessed using a validated skin-autofluorescence reader (AFR) in 285 consecutive renal transplant recipients (57% male, aged 50+/-12 years) visiting the outpatient clinic at a median (interquartile range) time of 73 (32-143) months after transplantation. Furthermore, various transplant- and recipient-related factors of interest were collected. **RESULTS:** Average skin-autofluorescence of lower arm and leg was 2.7+/-0.8 a.u. Skin-autofluorescence was positively determined by recipient age, systolic blood pressure, smoking, high-sensitivity C-reactive protein, duration of pre-transplant dialysis, and negatively by plasma vitamin C levels, creatinine clearance at baseline, and change in creatinine clearance since one year after transplantation in linear multivariate regression analysis. Together, these factors explained 41% of the variance of skin-autofluorescence. **CONCLUSIONS:** Skin-autofluorescence was associated with several risk factors for cardiovascular disease and chronic renal transplant dysfunction. These results are in line with the hypothesis that AGEs play a role in the pathogenesis of these conditions in renal transplant recipients. Prospective studies are required to investigate whether the AFR can be used as a simple, non-invasive tool to identify and monitor patients at risk for chronic renal transplant dysfunction and cardiovascular disease.

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