

**Accumulation of advanced glycation end products, measured as skin autofluorescence, in renal disease.**

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Advanced glycation end products (AGEs) accumulate during renal failure and dialysis. Kidney transplantation is thought to reverse this accumulation by restoring renal function. Using a noninvasive and validated autofluorescence reader, we evaluated AGE levels in 285 transplant recipients (mean age, 52 years; range, 41 to 60 years), 32 dialysis patients (mean age, 56 years; range, 43 to 65 years), and 231 normal control subjects (mean age, 51 years; range, 40 to 65 years). Measurements in transplant recipients were performed for a mean of 73 months (range, 32 to 143 months) after transplantation. Dialysis patients were on dialysis therapy for a mean of 42 months (range, 17 to 107 months). Fluorescence was significantly increased in dialysis patients compared with normal control subjects (2.8 vs. 2.0 arbitrary units [a.u.], $P < .0001$). Although fluorescence levels were significantly decreased in transplant recipients compared with dialysis patients (2.5 vs. 2.8 a.u., $P < .0001$), fluorescence in transplant recipients was higher than in controls (2.5 vs. 2.0 a.u., $P < .0001$). In transplant recipients, fluorescence correlated positively with the duration of dialysis prior to transplantation ($R = 0.21$, $P < .0001$), and negatively with creatinine clearance ($R = -0.34$, $P < .0001$). No correlation was found between time after transplantation and fluorescence in transplant recipients ($R = -0.10$, $P = .10$). Fluorescence in dialysis patients was positively correlated with duration of dialysis ($R = 0.36$, $P = .042$). Our results, like those of others, suggest that kidney transplantation does not fully correct increased AGE levels found in dialysis patients. The increased AGE levels in kidney transplant recipients cannot be explained by the differences in renal function alone. The availability of a simple, noninvasive method (AGE-Reader) to measure AGE accumulation may be used to monitor AGE accumulation in a clinical setting as well as in a study setting.

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