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Albuminuria, a therapeutic target for cardiovascular protection in type 2 diabetic patients with nephropathy.

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BACKGROUND: Albuminuria is an established risk marker for both cardiovascular and renal outcomes. Albuminuria can be reduced with drugs that block the renin-angiotensin system (RAS). We questioned whether the short-term drug-induced change in albuminuria would predict the long-term cardioprotective efficacy of RAS intervention. METHODS AND RESULTS: We analyzed data from Reduction in Endpoints in Non-insulin dependent diabetes mellitus with the Angiotensin II Antagonist Losartan (RENAAL), a double-blind, randomized trial in 1513 type 2 diabetic patients with nephropathy, focusing on the relationship between the prespecified cardiovascular end point (composite) or hospitalization for heart failure and baseline or reduction in albuminuria. Patients with high baseline albuminuria (> or =3 g/g creatinine) had a 1.92-fold (95% CI, 1.54 to 2.38) higher risk for the cardiovascular end point and a 2.70-fold (95% CI, 1.94 to 3.75) higher risk for heart failure compared with patients with low albuminuria (<1.5 g/g). Among all available baseline risk markers, albuminuria was the strongest predictor of cardiovascular outcome. The association between albuminuria and cardiovascular outcome was driven by those patients who also had a renal event. Modeling of the initial 6-month change in risk parameters showed that albuminuria reduction was the only predictor for cardiovascular outcome: 18% reduction in cardiovascular risk for every 50% reduction in albuminuria and a 27% reduction in heart failure risk for every 50% reduction in albuminuria. CONCLUSIONS: Albuminuria is an important factor predicting cardiovascular risk in patients with type 2 diabetic nephropathy. Reducing albuminuria in the first 6 months appears to afford cardiovascular protection in these patients.

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