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Kidney Disease Progression in Nonalbuminuric Patients with Type 2 Diabetes

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Objectives : Albuminuria is a key prognostic feature of diabetic kidney disease (DKD), but some patients experience kidney disease progression without developing albuminuria, a condition known as nonalbuminuric DKD. This study aims to evaluate the prognosis and identify factors associated with kidney disease progression in patients with nonalbuminuric DKD.
Methods : A total of 24,558 patients with type 2 diabetes and no albuminuria at baseline were enrolled. Kidney function parameters, including estimated glomerular filtration rate (eGFR) and albuminuria, were repeatedly measured from the first clinic visit onward. Patients were classified into two groups: the nonalbuminuric group (no albuminuria until eGFR declined to 30 mL/min/1.73 m^2; n = 17,983) and the albuminuric group (albuminuria developed before eGFR declined to 30 mL/min/1.73 m^2; n = 6,575). eGFR decline and hospitalization risk were compared between the groups after matching baseline characteristics via propensity score analysis. Risk factors for eGFR decline in the nonalbuminuric group were identified using a Cox regression model.
Results : The nonalbuminuric group exhibited a slower rate of eGFR decline and a lower risk of all-cause and cardiovascular hospitalizations than the albuminuric group. In the nonalbuminuric group, eGFR decline was associated with older age, male sex, poor glucose control, diuretic use, and a history of cardiovascular disease. Conversely, high hemoglobin and serum albumin levels, as well as the use of metformin and statins, were negatively associated with eGFR decline.
Conclusions : Although nonalbuminuric patients generally have a favorable prognosis, a subset with specific risk factors may remains susceptible to DKD progression. Therefore, close monitoring of risk factors is essential in patients with nonalbuminuric DKD.

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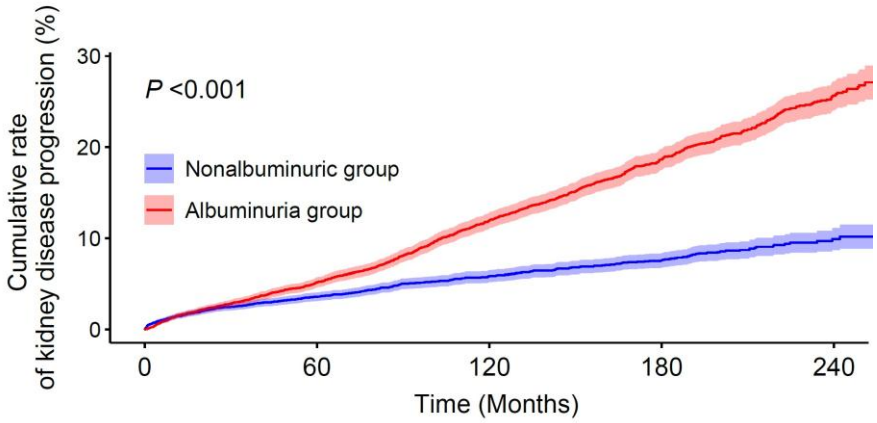

Number at risk

Nonalbuminuric group	6575	4780	3204	1873	390
Albuminuria group	6575	5349	3713	2285	698

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