**Risk factors for rapid progression and establishment of a predictive nomogram in patients with diabetic nephropathy**

**Background & Aim**

Diabetic nephropathy (DN) is typically a progressive disorder that may eventually leads to end-stage kidney disease necessitating kidney replacement therapy. The clinical course for DN can be broadly categorized into classic, albuminuria regression, rapid decline in kidney function, and non-proteinuric or non-albuminuric. This study aimed to determine the risk factors of DN with rapid kidney function decline and establish a corresponding nomogram.

**Methods**

We retrospectively collected data from 197 patients with biopsy-proven DN with an estimated glomerular filtration rate (eGFR) > 60 ml/min/1.73m2 between April 2020 and October 2023. Rapid progression was defined as an annual eGFR slope no less than 4 ml/min/1.73m2. Risk factors for rapid progressors were determined by the univariate an multivariate binary logistic regression.

**Results**

There were 89 (45.18%) rapid progressors and 108 (54.82%) non-rapid progressors. Univariate analysis indicated factors associated with rapid progression included type 1 diabetes, female gender, 24-hour proteinuria > 8g, lower hemoglobin at presentation, poor glycemic control with HbA1C > 7.5%, uncontrolled blood pressure, lower serum albumin, lower eGFR at presentation, higher low-density lipoprotein cholesterol, unhealthy lifestyle of smoking, and presence of diabetic retinopathy. The multivariate binary logistic regression showed that type 1 diabetes (OR=2.04, 95%CI 1.42-3.31), 24-hour proteinuria > 8g (OR=3.02, 95%CI 2.32-4.32), poor glycemic control with HbA1C > 7.5% (OR=1.92, 95%CI 1.42-2.45), and presence of diabetic retinopathy (OR=1.42, 95%CI 1.10-1.73) were independent risk factors for rapid progression. A nomogram based on these 4 factors were created.

**Discussion/Conclusion**

TRapid progression in DN is related to type 1 diabetes, massive proteinuria, higher HbA1C and diabetic retinopathy.