P0361 THE PREDICTIVE VALUE OF SERUM URIC ACID IN PRIMARY GLOMERULONEPHRITIS PATIENTS: A 5-YEARS RENAL PROGNOSIS

Mykola Kolesnyk[1], Natalia Stepanova[1], Lyudmyla Snisar[1], Larysa Lebid[1]

[1]State Institution «Institute of Nephrology of the National Academy of Medical Sciences», Nephrology & Dialysis, Kyiv, Ukraine

Background and Aims: Primary glomerulonephritis (PGN) is one of the leading causes of end-stage renal disease worldwide. Preservation of renal function is a crucial global goal in the management of patients with chronic kidney disease (CKD) in general and PGN in particular. In addition to classical risk factors, hyperuricemia is regarded to be an independent risk factor for CKD development and progression. However, only a few studies have investigated the impact of hyperuricemia on PGN progression.

Therefore, this study aimed to analyze the association between serum uric acid (SUA) concentration and renal prognosis in PGN patients during a 5-year follow-up.

Method: A total of 344 patients with CKD 1-3 stages were included in this retrospective observational single-center study. Among them, there were 194 (56.4 %) patients with biopsy-proven PGN and 150 (43.6 %) patients with a clinical diagnosis of PGN. All patients were treated according to the KDIGO Practice Clinical Guidelines for Glomerulonephritis.

eGFR (milliliters per minute per 1.73 m^2) was calculated using the CKD-EPI formula and its baseline value was based on the first available eGFR in PGN diagnosed patients. The patients with eGFR< 30 mL//min/1.73 m^2 were excluded from the study at the time of PGN diagnosis. None of the patients was on urate- or lipid-lowering therapy at the time of baseline data.

Hyperuricemia was defined as SUA concentration ≥420 μmol/L (7 mg/dL) for males and ≥360 μmol/L (6 mg/dL) for females. The rate of eGFR fall per year was used to assess CKD progression. It was calculated as the difference between eGFR (mL/min/1.73m2) at baseline and the last values: (Last eGFR – Baseline eGFR) / Follow-up period per year).

For the analysis, the patients were gender-stratified into 3 SUA quartiles according to average SUA levels at baseline: Q1- < 265 μmol/L for men and <220 μmol/L for women, Q2- 265-446 μmol/L for men and 220-369 μmol/L for women, Q3- ≥ 447 μmol/L for men and ≥ 370 for women. The analysis and all graphs were performed using MedCalc (Belgium).

Results: Hyperuricemia was found in 72/206 (35 %) men and 38/138 (27.5 %) women (p = 0.0003). During the average 5-years follow-up period (5.3 [3.8-6.2]), there were 114 (33.1%) patients who eventually progressed to eGFR<15 mL/min/1.73 m2 or started RRT. Among them there were: Q1- 10 (12%) patients, Q2 - 52 (31.5%) patients, Q3 - 52 (54.7%) patients (p< 0.0001).

The highest renal progression level was observed in Q3 patients: -5.5 [-15.4; -1.8] mL/min/1.73 m^2 versus -3.5 [-6.4; -1.7] and -4.6 [-10.6; -2.7] mL/min/1.73 m^2 in Q2 and Q1 patients, respectively. In multivariate logistic regression analysis, SUA level in men (≥ 447 μmol/L) and women (≥ 370) was determined as an independent risk factor for rapid CKD progression (OR: 2.5, 95% CI: 1.47-4.23, P = 0.0007).

Conclusion. Our study showed that a higher SUA level was associated with a significant rapid eGFR decline during a 5-year follow-up. The study findings suggest that hyperuricemia is a potentially modifiable factor for CKD progression.