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Renal Outcomes of IgM Nephropathy: A Comparative Prospective Cohort Study

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Objectives: Immunoglobulin M nephropathy (IgMN) has been known to be an idiopathic glomerulonephritis characterized by diffuse deposits of IgM in the glomerular mesangium but its renal prognosis is still largely unknown.

Methods: In this study, we compared the renal outcome in IgMN patients (n=94) with those in patients with minimal change disease (n=57), focal segmental glomerulosclerosis (FSGS, n=81) or immunofluorescence (IF)-negative nonspecific mesangial proliferative glomerulonephritis (MsPGN, n=26) from a prospective observational cohort with a total of 1,791 patients undergoing native kidney biopsy in eight hospitals affiliated with The Catholic University of Korea between December 2014 and October 2020.

Results: On kidney biopsy findings, IgMN had more mesangial proliferation and matrix expansion than MsPGN and more tubular atrophy and interstitial fibrosis than MCD. IgMN patients had the decreased estimated glomerular filtration rate (eGFR) compared with MCD patients in the earlier follow-up post-biopsy but there were no significant difference in urine protein and eGFR among all patients diagnosed with any glomerular disease at the last follow-up. When IgMN was divided into three subtypes according to light microscopic and clinical findings, patients with FSGS-like IgMN tended to have lower eGFR than those with MCD-like or MsPGN-like IgMN and higher proteinuria than MsPGN-like IgMN without any statistical significance. The presence of hypertension at kidney biopsy and requirement of immunosuppressive agents predicted eGFR decline $\geq 20\%$ over 2 years in patient with IgMN.

Conclusions: Taken together, our data indicate that IgMN would have clinical course and renal prognosis similar with MCD, FSGS or IF-negative MsPGN.