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Comparative Clinical Manifeatations of IgG4-related and IgG4-negative Primary Tubulointerstitial Nephritis

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Aims: To evaluate the prevalence of IgG4-related tubulointerstitial nephritis (TIN) and compare the clinical manifestations of IgG4-related and IgG4-negative primary TIN.

Methods: Of 5,174 renal biopsies obtained between January 1996 and February 2010, 46 were positive for primary TIN without other kidney disease. Biopsy tissues were lost for two patients. The remaining 44 samples were assayed by immunoperoxidase staining with monoclonal mouse antibody to human IgG4.

Results: Of the 44 patients with primary TIN, 12 (27%) were identified as IgG4+ plasma cells/HPF ≥10 and 32 (73%) as <10. eGFR was lower and proteinuria was higher in patients with IgG4+ plasma cells/ HPF ≥10 ($p<0.05$). No other parameter such as age; gender distribution; incidence of hypertension, diabetes mellitus, drug history, pyuria; concentrations of hemoglobin and alkaline phosphatase; or kidney size differed significantly. Of the 44 patients with primary TIN, 25 (57%) were identified as IgG4-positive (IgG4+ plasma cells/HPF ≥1) and 19 (43%) as IgG4-negative. The two groups did not differ in age; gender distribution; incidence of hypertension, diabetes mellitus, drug history, pyuria, or proteinuria; concentrations of hemoglobin and alkaline phosphatase; estimated glomerular filtration rate (eGFR); or kidney size. The improvement rate, however, was significantly higher in IgG4-positive than in IgG4-negative patients ($p=0.045$). Of the 25 IgG4-positive and 19 IgG4-negative patients, 18 and 13, respectively, were treated, and 18 and 7, respectively, improved ($p=0.002$). The median number of IgG4-positive plasma cells/HPF in the former group was 8 (range 1-90). The number of IgG4-positive plasma cells was significantly associated with the degree of proteinuria ($r=0.471$, $p=0.018$) and age ($r=0.529$, $p=0.007$).

Conclusion: Routine IgG4 staining is necessary in patients with primary TIN. Early treatment is also important in patients with IgG4-related primary TIN.

Key Words: 사구체신염, 면역글로불린G4, 임상양상
IgG4, Tubulointerstitial nephritis, Outcome