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Characterization of IgA deposited in the kidney in patients with IgA nephropathy and Minimal change disease (MCD)

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Objectives: Some patients with IgA nephropathy (IgAN) have mild mesangial lesions with acute onset nephrotic syndrome and diffuse foot process effacement like minimal change disease (MCD). It is not clear whether these unusual cases of IgAN with MCD are variant types of IgAN or coincidental deposition of IgA in patients with MCD. Moreover, the pathophysiology of patients classified as IgAN with MCD has not been clearly investigated.

Methods: In a multicenter cohort study from 18 hospitals in Korea, we collected and retrospectively analyzed 46 patients with IgAN with MCD. The patients only included with clinical manifestations of nephrotic syndrome and histologically diagnosed IgA nephropathy with mild mesangial lesions without endocapillary proliferation, segmental sclerosis, and crescent. We compared the prognosis of IgAN with MCD with that of pure MCD. Besides, we performed a monoclonal antibody to galactose-deficient IgA1 (KM55) staining to characterize IgAN with MCD. Immunostaining of KM55 was performed in paraffin-embedded sections of kidney biopsy specimens from 5 patients with IgAN with MCD, 5 patients with primary IgAN, and 4 patients with lupus nephritis.

Results: Among 21,697 patients with glomerulonephritis enrolled in the database, 46 cases (0.21%) for IgAN with MCD, and 1,610 cases (7.4%) for pure MCD. There was no difference in prognosis between the patients with IgAN with MCD and the patients with MCD. IgA and KM55 showed double positive in 4 out of 5 patients with IgAN with MCD. In one patient with IgA with MCD, both IgA and KM55 were negative in the mesangial area. However, in 4 patients with lupus nephritis, mesangial IgA was deposited, but galactose deficient-IgA1 was not. These findings suggest that IgAN with MCD is a dual glomerulopathy in which MCD was superimposed on possibly indolent IgAN.

Conclusions: We confirmed that IgAN with MCD was true IgAN by KM55 staining, enabling prediction of long-term prognosis.