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Analysis of Expression of Galactose-deficient IgA1 using KM55 Monoclonal Antibody; Use in Diagnosis of IgA Nephropathy and Prediction of Disease Activity and Prognosis

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Case Study : IgA nephropathy (IgAN) is the most common primary glomerulonephritis worldwide and leading cause of end stage renal disease in especially young adults. Recently, galactose-deficient IgA1 molecules (Gd-IgA1) have begun to be noted as playing a central role in the pathogenesis of IgAN. This study recruited 16 biopsy-proven IgAN patients and 23 patients with other renal diseases (DMN 2, FSGS 4, lupus 5, MCD 6, and MGN 6). We stained mesangial Gd-IgA1 deposition using KM55 antibody in all cases and analyzed whether it was expressed and the differences according to disease activity. There were no significant differences in age or gender patients with IgAN and the disease controls. In the IgAN group, hematuria was significantly more common (p=0.024). Although more patients with elevated serum IgA levels were observed in the IgAN group, this was not statistically significant (p=0.073). Pathologically, all cases of IgAN were confirmed to have an intensity of 2+ or higher in the mesangium on the IgA immunofluorescence test. For all cases including IgAN and other renal diseases, immunostaining was performed using KM55 antibody, and the presence and degree of expression were evaluated. The specificity and sensitivity of the KM55 antibody for IgAN was assessed. We expected identification of mesangial Gd-IgA1 only in patients with IgAN by KM55, which provided an alternative, easy, and reliable tool for diagnosis of IgAN and disease acitivity assessment.