C5 Component: Immunopathological Index for the Activity of IgA Nephropathy

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Dear Sir,

IgA nephropathy has been shown to be associated with the alternative pathway of complement activation [1, 2]. Both C3 and properdin are frequently found in glomerular IgA-containing deposits, while Clq and C4 have been occasionally identified [3]. The presence of the late complement components such as C5 and C9 is, however, rarely discussed [1, 4, 5].

We have examined 63 renal tissues from consecutively admitted adults with IgA nephropathy by direct immunofluorescence, using a panel of fluorescein-conjugated antisera to human IgG, IgA, IgM, Clq, C3c, C4, C5, and properdin (Behringwerke, Marburg, FRG). Both light and electron microscopic examinations were performed for correlation analysis. IgA was found to be the predominant deposit in mesangia, together with C3c in 96.8% and with properdin in 84.1% of the samples. Both IgG and IgM were present equally in 57.1% of the specimens, while Clq and C5 were found in 17.5 and 33.3%, respectively. Only 2 cases showed positive C4. When correlated with the findings of light microscopy, 71.4% of C5 was found in diffuse mesangial proliferative lesion with the rest in other histological types of lesions including minimal lesion, mild mesangial expansion/proliferation, focal and segmental glomerulonephritis, and diffuse sclerosing glomerulonephritis. In addition, 85.7% of glomerular C5 was also associated with disseminated, very large-sized/lumpy electron-dense deposits corresponding to excessive amounts of immune complexes. The latter were also noted in 87.0% of diffuse mesangial proliferative lesions. However, only 0.0, 27.8, 20.0, and 0.0% of the remaining histological types (minimal lesion, mild mes-

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angial expansion/proliferation, focal and segmental glomerulonephritis, and diffuse sclerosing glomerulonephritis, respectively) were found to have such deposits. Most of these lesions revealed focal, small/spotty electron-dense deposits.

Our data suggest that the presence of abundant glomerular immune deposits may be responsible for both the fixation and the persistence of C5, which may reflect an active status in the renal injury of IgA nephropathy. If this is the case, the presence of C5 in glomeruli may be used as a useful immunopathological index to indicate the activity of the disease. We, therefore, recommend the routine use of C5 for renal tissues from patients highly suspected of IgA nephropathy.

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