

LETTER TO THE EDITOR

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Significance of Immunostaining Data in IgA Nephropathy Patients; Current Knowledge and New Concepts

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Recently much attempts have been directed towards the significance of immunostaining findings and their correlations with clinical and morphologic lesions in IgA nephropathy (IgAN) patients.^{1,2} However few investigations have been conducted on this subject. IgAN is the most common glomerulonephritis globally and is a leading cause of chronic kidney disease throughout the world.²⁻⁶ As the most prevalent primary chronic glomerular disease,² it is of significant importance to find aggravating factors affecting the disease progress, monitor disease activity and find an opportunity to envisage disease-specific therapy.⁷⁻¹⁰ The diagnostic hallmark of IgAN is the preponderance of IgA deposits, with C₃ in the mesangial area of the glomeruli.¹⁻⁵ IgG or IgM deposits may also be detected, however they have lower intensity than IgA.²⁻⁵ C_{1q} deposition is usually absent and its absence is a diagnostic point for this disease.^{1,2} In some cases, the mesangial deposits may extend to capillary walls too.²⁻⁶ Here, there are some important questions, firstly, what is the clinical significance of the intensity of the deposits, or whether deposition of IgG /IgM have any clinical significance. Furthermore, the mesangial-capillary versus pure mesangial deposits have any clinical importance?

Previously, in a study on 265 IgAN patients, Bellure et al. reported that location of glomerular IgA and the presence of IgG correlate with mesangial and endocapillary cellularity. This study supports the

significance of IgG and capillary wall IgA in the development of proliferative changes in IgA nephropathy.¹¹ Recently, we conducted a study on 114 biopsies of IgAN patients and we found that only C3 deposits showed a significant correlation with serum creatinine. IgA, IgM and IgG deposits' intensity showed no significant association with serum creatinine. Our study also revealed that IgA deposition score had significant positive association with endocapillary proliferation and segmental glomerulosclerosis.¹² Moreover, IgM deposition score showed positive association with segmental glomerulosclerosis. In this study, no significant association of IgG deposition score with four morphologic variables of Oxford classification of IgAN was observed. There was significant association of C₃ deposition score with segmental glomerulosclerosis and endocapillary proliferation too.¹² More recently, Maeng et al. conducted a retrospective study on 23 patients of biopsy proven IgAN. They found that 56.5% were positive for C_{4d} staining in the glomerulus and 47.8% were positive in the tubular epithelium. They also found that glomerular C_{4d} deposition was associated with albuminuria and tubular C_{4d} deposition was associated with a higher grade of IgA nephropathy. They concluded that activation of the complement system was interacted in kidney injury and was identified through deposition of C_{4d} in the glomeruli and tubules of IgAN. Positive C_{4d} staining in the glomeruli and the tubules may be associated with functional damage related to glomerular filtration and poor renal outcome.¹³ Indeed, the intensity of deposited IgA, IgG or C₃ is not validated to be included as a

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factor for treatment or follow up study yet. However, the subsequent studies by the above mentioned authors found immunostaining data to be potentially helpful in predicting some of the morphological variables of IgAN. In fact, IgAN is considered to be an immune complex-mediated glomerulonephritis.¹⁴⁻¹⁶ The presence of electron-dense deposits may have value for the evaluation of the disease activity. Furthermore, the location of deposited immunoglobulins (pure mesangial versus mesangial-capillary) is also may have prognostic significance.¹⁰⁻¹³

We therefore suggest more studies on the prognostic significance of deposited antibodies in this disease, especially in different ethnic communities.

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