Methods Involving Complement Fixation Are Not Suitable for the Detection of Circulating IgA Immune Complexes

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Dear Sir,

References

Sato et al. [1] used solid-phase anti-C3 enzyme immunoassay (EIA) to detect the IgA-CIC in their patients with IgA nephropathy. It is doubtful whether IgA-CIC alone will fix C3 and allow a subsequent immune reaction by using anti-IgA antibody in the solid-phase EIA. We [2] have recently investigated the activation of the complement system in vitro and in vivo by naturally occurring IgA-CIC and covalently cross-linked oligomers of human IgA. Both IgA-CIC and cross-linked IgA oligomers were unable to cleave C3 or factor B in normal human serum. Passive infusion of both types of complexes into mice resulted in glomerular deposition without concomitant induction of C3 deposits. These findings suggest that neither soluble nor renal localized human IgA-CIC will activate complement. Clinically, C3 and other complement components may localize in the glomeruli of patients with IgA nephropathy. However two comprehensive clinical studies showed that only 55% of the patients with exclusively IgA immune deposits had concomitant C3 deposits [3,4]. In contrast, 85–90% of the patients had C3 deposits when IgG and/or IgM was codeposited with IgA. Thus other classes of immunoglobulin may be responsible for C3 deposition.

We would recommend the use of polyethylene glycol for the precipitation of IgA-CIC [5–7], followed by EIA. Methods involving complement fixation for detecting IgA-CIC may not yield unequivocal results.

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