Bactericidal Activity of Serum of a Child with Focal Proliferative Glomerulonephritis

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Dear Sir,

The complement (C) system of serum plays an important role in host defense against gram-negative bacterial infections. The bactericidal activity of sera from patients with pyelonephritis [1] or with chronic renal failure [2] was reduced in comparison with sera from healthy persons. The present study was designated to determine the bactericidal activity of serum of an 8-year-old girl suffering from focal proliferative glomerulonephritis. C-hemolytic activity (CH50) in the girl’s serum was reduced to 2.6% of the level found in the sera of her parents. Pseu-domonas aeruginosa (32 strains) and Escherichia coli (6 strains) freshly isolated from patients with urinary-tract infections were tested. It was shown, in a bactericidity test [3], that the serum of the girl was active only against 3% of the P. aeruginosa strains used. The sera of the girl’s parents were active against 50% of these strains. Similar results were obtained in the case of E. coli strains. Depression of the level of C is a common feature of many types of nephritis and may be connected with a deficit of its component [4]. Lack or deficiency of C components may result from their binding into immune complexes, which could be found in the patient (e.g. C3 component granular deposits were identified in renal glomerules and localized in the mesangium and along the walls of the vascular loops by immunofluorescence test). Deposition of insoluble immune complexes in tissues can activate C, leading to assembly of the C5b-9 complexes. The authors think that the abnormal C concentration could cause the impaired bactericidal activities of the patient serum.

References
Eichenfield LF