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Complement investigations are of limited value in monitoring of systemic lupus erythematosus without nephritis

Azzeddine Tahiat and Kamel Djenouhat
Rouiba Hospital, Algeria

Introduction: Various laboratory tests including antibodies to native DNA and C1q and different complement tests are routinely used in the assessment of systemic lupus erythematosus (SLE) patients to supplement clinical examination in order to optimize treatment and to consider prognosis. The complement system has long been known to be activated in exacerbations of SLE, particularly reflecting nephritic activity.

Objective: The aim of this study was to evaluate the correlation between disease activities and complement activation in SLE patients with mild disease and with no renal involvement.

Methods: We studied 42 SLE patients (36 females, 6 males) without nephritis. Levels of complement C3 and C4 were measured by nephelometry. Total complement hemolytic activity was measured with assays specific for the classical pathway (CH50). Terminal SC5b-9 complement complex (TTC), as an activation product from the final common pathway, was quantified by ELISA.

Results: Lupus flares were observed in 11 (26%) patients. Decrease CH50 was noted in 13 (31%) patients but was not associated with increased complement activation. Slightly moderate decreased C4 was found in five patients and severely decreased C4 (<0.05 g/l) in three patients. Three patients had decreased C3 in conjunction with positive anti-C1q antibodies and low C4 concentrations. Complement activation products (SC5b-9) were either normal (66.7%) or slightly elevated (33.3%). None of the variables tested correlated with disease activity.

Conclusion: Our data suggest that complement tests are of limited value in monitoring of SLE patients without renal involvement.

azdinemail@yahoo.fr