DNA Antibody in the Pathogenesis of SLE

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The role of autosensitization to nuclear antigens in the pathogenesis of SLE was studied in 82 patients with SLE.

1) DNA antibody was the most specific antibody in SLE and as sensitive as ANA.

2) Mixed type of cryoglobulins containing rheumatoid factor activity were found in active SLE.

3) In active lupus nephritis DNA antibody titers tended to be higher, but equally high titers were found among non-renal patients. These antibodies, however, showed relatively low complement-fixing ability.

4) Free DNA in serum was determined in 5 patients without DNA antibody. They showed DNA antibody subsequently to disappearance of DNA and serum complement decreased and clinical exacerbation occurred.

5) ENA (extractable nuclear antigen) antibody occurred less frequently in lupus nephritis, more in overlap syndrome and predominantly in PSS and RA.

6) Six patients with definite SLE had never shown ANA.

7) Negative DNCB and PPD skin tests, with positive M. I. T. and blastoid transformation of lymphocytes by adding DNA, were observed frequently in SLE.

8) Signs and symptoms of SLE disappeared completely subsequently to generalized tuberculous or varicella zoster infections in 4 cases.

9) Antibody titers to measles were significantly high in SLE. Antibody to Poly-IC was frequently found in SLE and PSS.

10) Sera from patients with active SLE showed high DNase inhibitory activity, and after steroid therapy the activity became lower with increasing DNase activity. In remission, however, the inhibitory activity increased again with normal DNase activity level.

These results indicated that production of humoral antibody and cellular immunity to free DNA released from tissue destruction by various causes including viral infections played an etiological role in pathogenesis of SLE. High DNase-inhibitory activity might also play a significant role in releasing free DNA in serum.