Antichromatin antibodies as amarker detection of lupus nephropathy

Eman Wageeh El Shorpagy

Summary and ConclusionSystemic lupus erythematosus is an autoimmune rheumatic disease characterized by diverse clinical features and the presence of autoantibodies in the serum. The immunologic basis of SLE is multifactorial and still elusive.SLE exhibits a variety of clinical features, including exacerbation and remission. Detecting changes in disease activity in SLE is therefore of paramount importance.The pathologic findings of SLE occur throughout the body and are manifested by inflammation, blood vessels abnormalities and immune complex deposition. The best characterized organ pathology is the kidney due to autoantibody deposition at the glomerular basement membrane.The autoimmune disease SLE is characterized by the formation of ANA, including antibodies to dsDNA. Initially, it was thought that the formation of anti-dsDNA antibodies in SLE was mainly due to polyclonal B cell activation. However in recent years, it has become clear that the autoimmune response in SLE is T cell dependent and autoantigen driven. The chromatin has been identified as a major autoantigen in SLE, driving a large part of the autoimmune response. The only way to generate chromatin in vivo is by apoptosis. During apoptosis, chromatin are sequestered in apoptotic blebs, together with other lupus auto antigens, after which they can be released into the circulation chromatin (Nucleosomes) are important not only in the induction phase of SLE, but also in the initiation of tissue lesions by targeting auto antibodies to basement membrane. They have shown that ANA, which are complexes with nucleosomes, are able to bind to the glomerular basement membrane; where as purified antibodies do not.The nucleosome, the fundamental unit of chromatin released by internucleosomal cleavage by endonucleases during cell apoptosis. Nucleosomes are important in the induction phase of SLE, also in initiation of tissue lesions by targeting autoantibodies to basement membranes.This study was carried out to study serum antichromatin IgG in SLE patients and correlate its level with the disease activity and studying the relation of antichromatin IgG to lupus nephritis in SLE patients.We conduct our study on 45 SLE patients; they were divided into two groups according to the presence or absence of lupus nephritis, and 55 normal healthy subjects serving as a control group. All patients and control group were subjected to complete history taking, thorough clinical examination, and laboratory tests including complete blood picture, ESR, anti-dsDNA Abs, ANA Abs, serum C3, C4 levels, renal function tests (serum creatinine level, BUN, and creatinine clearance), 24 hours protein in urine, complete

urine analysis, and renal biopsy if needed.Serum antichromatin IgG was measured in all patients and control by ELISA technique.The present study reveals:- Serum antichromatin IgG level was significantly increased in SLE patients compared to 0.05).- There was a highly statistical significant difference between control group (P mean antichromatin IgG Abs and the presence or absence of proteinuria 0.05).There was no correlation between antichromatin IgG antibodies, and (P different previous variables among non renal affected cases (subgroup B) (P > 0.05).There was a statistically significant difference between the steroid receiving group and group receiving immunosuppressive therapy (either the indoxane 0.05).In this study, anti receiving group or the combined therapy group) (P chromatin antibodies showed a high sensitivity and specificity in patients with SLE and their levels were significantly higher than normal control. These data appear to be useful in addition to the laboratory tests that can help in the diagnosis, especially in patients who have SLE and lack anti-dsDNA antibodies. Moreover, the antichromatin antibody levels were significantly higher in patients with active renal affection, arthritis, malar rash and haematological disorders and were correlated significantly with SLEDAI score. Therefore, serum anti-chromatin antibody levels could be a useful parameter in the diagnosis, activity assessment especially active renal disease and may have a role in prediction.