

The relationship between kidney function tests and systemic lupus erythematosus

Hanan A.E. Soliman

Chemistry Department, Biochemistry Branch, Faculty of Science,
Beni - Suef University, Egypt

ABSTRACT

Aim of the study

The aim of the present study was to determine the clinical utility of some biochemical parameters in the differential diagnosis of Systemic Lupus Erythematosus (SLE) patients.

Subjects and Methods

The present study was carried out on 40 SLE patients according to the criteria of American Rheumatism Association (ARA); 20 other patients with rheumatic diseases and 20 normal controls were tracked in the study. All the groups of the study were tested for complete blood picture (CBP), erythrocyte sedimentation rate (ESR), kidney function tests and total protein in plasma and urine.

Results

The level of haemoglobin was decreased significantly in SLE, while the group with other rheumatic diseases showed non significant change as compared to the normal control. Leukopenia was common in SLE patients only. The count of white blood corpuscles decreased significantly in SLE in comparison with the normal control. The differential count of white blood corpuscles in SLE patients showed significant decrease in both lymphocytes and neutrophils while the control group did not. ESR in different rheumatic diseases exhibited a significant increase as compared to the control group. The kidney function tests showed a significant increase in SLE patients only, while the kidney function measures in patients with other rheumatic diseases were more or less unchanged. The levels of blood urea and albumin in urine exhibited a significant increase in the SLE group.

Conclusions

In conclusion, we suggest the use of kidney function tests in the differential diagnosis of SLE.

Keywords: Lupus Erythematosus, Systemic Tests, Kidney function Diagnosis, Differential Complete blood count, Erythrocyte sedimentation rate

INTRODUCTION

Systemic Lupus Erythematosus (SLE) is a chronic inflammatory disease of unknown cause, but genetic, hormonal, environmental and immunologic factors all appear to play a role. It may affect the skin, joints, kidneys and other organs of the body.¹ Kaposi² was the first who reported that lupus could exist as a systemic disorder and not just a skin problem. However the recognition of the lupus erythematosus (LE) cell³ in 1948 opened the possibility that pathologic abnormalities might have an immunologic basis.

Diagnosis of SLE can be somewhat difficult. There are no definitive tests for diagnosing SLE. Many of the symptoms and laboratory test results of SLE patients are similar to those of patients with different diseases, including rheumatoid arthritis, multiple sclerosis, and various nervous system and blood disorders. When a patient diagnosed with lupus develops new or recurring symptoms, laboratory testing of blood or urine can add information on whether the symptoms are due to an increase in lupus activity. Generally the disease activity is positively correlated with a rise in: ESR, urine protein or cellular casts, kidney function tests, complete blood count (CBC) and serum albumin.

Anemia is the most common finding occurring in 50% of patients and it may reflect inflammation, renal insufficiency, blood loss and immune mechanisms.⁴ Leukopenia (white blood cell count of less than 4500) has been noted in 50 to 60% of patients. Functional defects of neutrophils have also been noted in SLE patients. The number of basophils may be decreased during active SLE.⁵ The electrophoretic pattern in SLE is not specific. Serum albumin levels are low and gamma globulin levels may be low in nephrotics.⁶ Erythrocyte sedimentation rate (ESR) was elevated in patients with active disease.

Corresponding author: Hanan A.E. Soliman,
Department of Chemistry,
Biochemistry Branch, Faculty of Science,
University of Beni-Suef, Beni-Suef, Egypt.
E-mail: hanan_abdelhameid@yahoo.com.