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Original Research Article

Evaluation of Some Biochemical Parameters in Women Suffer from Systemic Lupus Erythmatosis

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Abstract: A rise in the number of women suffering from SLE has been noted by researchers. The research comprised 70 patients and thirty healthy normals. They were between the ages of fifteen and fifty-three; the sample was gathered from different clinics in Iraq. The Blood samples were taken for serum isolation. The serumis used for evaluation of serum glucose level, triglyceride level, cholesterol level, alanine transaminase (ALT), aspartate transaminase (AST), urea nitrogen level, uric acid. The results showed that AST and ALT were increased significantly in SLE patients. cholesterol and triglycerides have increased significantly, according to biochemical tests. Serum glucose, urea nitrogen, and uric acid levels changed by a negligible amount. In conclusion, SLE has an effect on liver functions and lipid profile while it doesn't affect Kidney functions and fasting glucose levels.

Keywords: DHEA, SLE, biochemical, women.

INTRODUCTION

It is possible to divide autoimmune illnesses into organ-specific as well systemic conditions [1]. Immune thyroid disease (AITD), one of the most prevalent autoimmune illnesses, is associated with a variety of other non-specific diseases, including Sjögren's syndrome as well as rheumatoid arthritis [2]. With the loss of immunological tolerance and the presence of cells and humoral immune response, the thyroid gland becomes dysfunctional as a consequence of auto-reactive T and B cells infiltrating and producing autoantibodies against gland antigens, resulting in clinical symptoms [3, 4]. Due to the fact that Hashimoto's thyroiditis and Graven's disease are both autoimmune diseases (AD), the clinical heterogeneity of the group may be characterized based on the presence or absence of hypothyroidism or hyperthyroidism in the patient [5]. The complex interplay between environmental and genetic factors is at play in autoimmune inflammatory or anti receptor disorders that are characterized by their sensitivity to auto-thyroid antigens [7, 8]. In SLE, the immune response and generation of autoantibodies are disrupted, leading to organ damage and dysfunction in several systems [9]. Women are nine times more likely than males to have the condition, and this is notably true throughout the childbearing years (15-35), as well as among non-Europeans [10]. Environmental risk factors include, but are not limited to, ultraviolet radiation, Epstein-Barr virus, endogenous retroviral sequences, and a wide range of drugs.

As previously reported, thyroid problems have been linked with systemic lupus erythematosus [11]. Bombardier and colleagues detailed the SLEDAI in great detail in 1992 after it was invented in Toronto in 1986 [12]. In terms of disease activity, the SLEDAI seems to be responsive over time [13].

This study aimed to evaluate the effects of systemic lupus erythematosus on some biochemical parameters.

MATERIALS AND METHODS

In this study, 70 patients and 30 healthy volunteers took part in the study. They ranged in age from fifteen to fifty-three years old, and the sample was taken from an Iraqi hospital. Each sick and healthy person had 5ml of venous blood drawn (9:00am) at the same time. Using a (5ml) disposable syringe, we were able to collect five milliliters of blood. An ESR of two milliliters was recorded in sodium citrate tubes and three milliliters in gel. After 30 minutes at room temperature, the samples were centrifuged at 2500 rpm for 5 min., and the serum was separated and preserved at (-20°C) immediately before analysis of the biochemical markers, which included serum glucose level, cholesterol level, triglyceride level, aspartate transaminase (AST), urea nitrogen level, and uric acid levels. As instructed by the firm, they were completed (Biolabo company).

RESULTS AND DISCUSSIONS

Fasting Serum Glucose Level: Compared to healthy women, SLE patients' blood glucose levels did not differ significantly.
Serum AST and ALT Activity: Serum AST as well as ALT activity were significantly increase in SLE patients as compared with healthy women in this investigation.

Kidney Functions:
Serum Urea Nitrogen Levels: SLE women's serum urea nitrogen levels did not differ significantly from those of normal women.
Serum Uric Acid: SLE women's serum uric acid levels did not differ significantly from those of normal women in this investigation.

Lipids Profile:
Serum Cholesterol Level: SLE patients' mean blood cholesterol levels were substantially higher than those of healthy controls (P<0.01).
Serum Triglyceride Level: The current findings clearly show that SLE women's serum triglyceride levels increased significantly (P0.01) in comparison to normal women (P<0.05).

Table 1: Biochemical parameters in SLE patients and normal

Parameters	SLE patients	Normal
Fasting serum glucose(mg/dL)	33.2±0.3A	32±0.8A
AST (IU/L)	23.4±0.7A	24±1.3A
ALT (IU/L)	29.4±0.2A	29±0.9A
Urea (mmol/L)	2.5±0.4A	2.6±0.1A
Uric acid(µmol/L)	152±1.8A	155±3.7A
Cholesterol (mg/dL)	294.4±13.1A	224.0±41.3B
Triglyceride (mg/dL)	184± 2.5A	113± 8.3B

DISCUSSIONS

Fasting blood glucose levels, normal transaminase activityin SLE patients did not vary significantly from those in the normal in this investigation. Normal liver function and glycogenolysis rate are to blame for this [14]. These findings show that the liver's function was unaffected by the presence of the lupus erythematosus systemic illness.

Serum urea nitrogen and uric acid levels did not differ significantly between SLE patients and healthy women in this study.

Some studies have shown that up to 60% of SLE patients had abnormalities in liver enzymes at some point throughout their disease [15, 16]. A challenging differential diagnosis might be complicated in patients with SLE and elevated liver enzymes. It is necessary to rule out other possible causes for the high level of liver enzymes, such as hepatotoxicity from drugs, viral hepatitis, and fat-related liver disease [17, 18]. Lupus hepatitis, overlap syndrome, and lupus hepatitis are only two of the SLE-related illnesses that may cause elevated liver enzyme levels. In order to validate the high level of liver enzymes as a component of SLE sickness, an accurate clinical examination, serological tests, and usually liver biopsy are required. When SLE occurs all by itself, it is uncommon for it to be accompanied with a serious liver disease. Lupus liver dysfunction, also known as "lupus hepatitis," is typically asymptomatic. Serum transaminase levels are slightly elevated, which identifies the condition. Lupus was thought to be the cause of liver failure in 28–42 percent of the individuals studied. Treatment of SLE and steroid therapy for lupus hepatitis results in a benign course with no long-term consequences, and liver functions recover to normal [19]. This outcome was noticed in our investigation as well.

The liver, adrenal glands, and intestines all play a role in cholesterol synthesis. Bile acids and steroid hormones are precursors of cholesterol, which is a vital part of the cell membrane [20].

SLE patients had substantially higher levels of cholesterol, total blood lipids, and triglyceride compared to the normal group. Lower clearance and greater synthesis of the primary transporters of endogenously produced triglyceride may explain the enhanced serum triglyceride levels seen in this investigation. As a result of higher intestinal cholesterol production and absorption, elevated blood cholesterol levels may be explained. Formiga *et al*., reported comparable findings to ours [21]. Svenungsson *et al*., [22] found that TC, as well as triglyceride levels, were greater in individuals with SLE, but HDL levels were lower.

CONCLUSION

SLE has an effects on liver functions and lipid profile while it don't effects on Kidney functions and fasting glucose level.

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