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Sex hormones and peripheral white blood cell subsets in systemic lupus erythematosus patients

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Abstract

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Background: Systemic Lupus Erythematosus (SLE) is an autoimmune disease characterized by antibodies to nuclear antigens, particularly anti-dsDNA. Imbalance between production and destruction of immune cells causes cytopenia. Sex hormones have immunomodulatory effects; estrogen increases the production of autoantibodies in SLE prone NZB/NZW mice. **Objective:** To investigate the relationship between sex hormones, anti-dsDNA, and lymphocyte subsets in Iranian patients with SLE. **Methods:** 38 SLE patients (28 females and 10 males) meeting 4 of 11 ACR revised criteria for SLE classification, and 20 age and sex matched healthy individuals (10 females and 10 males) participated in this study. Lymphocyte subsets were analyzed using flow cytometric analysis. Serum anti-dsDNA levels and sex hormones concentrations were determined using commercial ELISA and RIA kits, respectively. **Results:** The absolute count of white blood cells, lymphocytes, T lymphocytes (CD3⁺), T helper cells (CD3⁺CD4⁺), B cells (CD19⁺) and Nk cells (CD3⁻CD16⁺CD56⁺) in SLE patients diminished significantly in comparison to control group ($p < 0.05$). IgG anti-dsDNA antibody levels were significantly higher in patients compared to controls as expected ($p < 0.05$). Prolactin increased significantly, while DHEAS showed a significant decrease in SLE patients compared with the controls ($p < 0.05$), however the level of estrogen did not have any significant difference in SLE patients in comparison to controls. **Conclusion:** Increased concentration of prolactin together with a simultaneous decrease in serum DHEAS in SLE patients are associated with anti-dsDNA elevation and a decrease in almost all lymphocyte subsets.

Reaxys Database Information

Author keywords

Anti-dsDNA; DHEAS; Estrogen; Progesterone; Prolactin; SLE

Indexed Keywords

EMTREE drug terms: CD16 antigen; CD19 antigen; CD3 antigen; CD4 antigen; CD56 antigen; double stranded DNA antibody; estrogen; immunoglobulin G; prasterone sulfate; prolactin; sex hormone

EMTREE medical terms: adolescent; adult; antibody blood level; article; B lymphocyte; clinical article; control group; controlled study; enzyme linked immunosorbent assay; female; flow cytometry; helper cell; hormone blood level; human; human cell; leukocyte; leukocyte count; lymphocyte; lymphocyte count; male; natural killer cell; normal human; radioimmunoassay; systemic lupus erythematosus

MeSH: Adolescent; Adult; Antigens, CD; B-Lymphocyte Subsets; Female; Gonadal Steroid Hormones; Humans; Killers, Natural; Lupus Erythematosus, Systemic; Male; Middle Aged; T-Lymphocyte Subsets

Medline is the source for the MeSH terms of this document.

Chemicals and CAS Registry Numbers: immunoglobulin G, 97794-27-9; prasterone sulfate, 651-48-9; prolactin, 12585-34-1, 50647-00-2, 9002-62-4; Antigens, CD; Gonadal Steroid Hormones

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