Summary

Systemic lupus erythematosus (SLE) is a multisystem disease with a spectrum of clinical manifestations and a variable course characterized by exacerbations and remissions. Lupus is marked by both humoral and cellular immunologic abnormalities including multiple auto-antibodies that may participate in tissue injury. Assessment of disease activity is important for the clinician to make appropriate therapeutic decisions.

Lipid peroxides are the products of the chemical damage done by oxygen free radicals (OFR). This oxidative damage is thought to be a basic mechanism underlying many diseases including the autoimmune diseases. Because OFR are too harmful to biologic tissues, antioxidants will be a necessary when these radicals are produced in excess.

This study was conducted on 50 subjects; 30 patients with SLE and 20 normal, healthy volunteers as a control gorup, age and sex matched to our patients.

The patients were subjected to the following :

a- A thorough history taking.

b-Full clinical examination.

c-Laboratory investigations.

- Erthrogte sedimantation rate (ESR).
- Complete blood count (CBC).
- Complete urine analysis.
- Estimation of total albumin in 24hrs urine.
- Renal function test.
- Antinuclear antibodies (ANA) and anti-DNA antibodies.

d- Radiological investigation :

- X-ray chest.
- X-ray for the affected joints.

All subjects were subjected to the following laboratory investigations :

a- Measurement of malondialdehyde (MDA) as an indicator of lipid peroxidation.

b- Measurement of intracellular antioxidant enzymes

1- Superoxide dismutase (SOD)

2- Glutathion peroxidase (GSH-px) enzymes.

c- Measurement of antioxidant vitamins E and A.

Statistical analysis of the results showed :

- A highly significant increase in the level of MDA (as an indicator of lipid peroxidation) in SLE patients as compared to normal controls.
- A nonsignificant correlation of MDA with SLEDAI score in our patients.
- A nonsignificant correlation between all laboratory parameters (MDA, SOD, GSH-Px, vit. E and vit. A).
- A nonsignificant change in the level of MDA with any clinical manifestation.
- A highly significant decrease in the level of antioxidant enzymes (SOD and GSH-px) in patients as compared to the control group.
- A highly significant negative correlation of SOD enzyme levels with SLEDAI score.
- Significant decrease in SOD level in patients with Serositis and renal affection and nonsignificant change with other clinical manifestations.
- A nonsignificant correlation of GSH-Px with SLEDAI score.

- A nonsignificant change in the level of GSH-Px with any clinical manifestation.
- A highly significant decrease in the level of vitamin E in SLE patients as compared to the control group.
- A statistically significant negative correlation of vitamin E level with SLEDAI score. So, it can be used as a predictor of disease activity in lupus patients.
- Significant decrease in vit. E level in patients with serositis and a nonsignificant change with other clinical manifestations.
- A nonsignificant difference between patients and controls as regarding vit. A.
- A nonsignificant correlation of vit. A level with SLEDAI score.
- A nonsignificant change in the level of vit. A with any clinical manifestation.
- Significant decrease in SLEDAI score in patients with skin affection and highly significant increase in patients with CNS affection and nonsignificant change with other clinical manifestations.

CONCLUSIONS

- Measurement of MDA (as an indicator of lipid peroxidation) and antioxidant levels in SLE patients can give an -idea about the oxidant load and efficiency of antioxidant defense in those patients.
- Patients with SLE exhibit increased MDA level than normal controls that may have a possible role in the pathogenesis of disease but not correlated with the disease activity.
- Decreased antioxidant enzymes (SOD and GSH-Px) and vit. E in SLE patients than normal controls may entail the use of these antioxidants as a line of therapy in SLE. On the other hand, vit. A is not significantly decreased in our patients.
- Decreased level of SOD in patients with serositis and renal affection and invese correlation of SOD level with SLEDAI score.
- Decreased levels of vit. E in patients with serositis and inverse relation between vit. E level and SLEDAI score. So, it can be used as a predictor of serositis and disease activity.
- Patients with CNS affection are more active and patients with skin affection are less active than patients with other clinical manifestations.
- Dietary deficiency of important antioxidants can be considered a risk factor for SLE and a diet history in SLE patients in important.