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ESTIMATION OF BONE MINERAL DENSITY IN SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS BY DUAL-ENERGY X-RAY ABSORPTIOMETRY (DXA)

Thesis
Submitted in partial fulfillment for
The Master Degree (M.Sc.) in Rheumatology & Rehabilitation
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"thanks God, The most mighty and the most merciful, befor and after"

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ABSTRACT

Objective: To determine the effect of SLE on BMD of trabecular and cortical bone in patients with systemic lupus erythematosus (SLE) and to correlate the results with disease activity and steroids intake.

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Methods: Bone mineral density (gm/cm²) at the lumbar (L1- L4 vertebrae), at the left femur (neck, trochanter, intertrochanter and Ward's triangle) and at the lower end of radius and ulna of non dominant hand was measured by dual energy X-ray absorptiometry in 20 SLE patients (mean age 27.2 ± 8.97 years, mean disease duration 4.8 ± 5.3 years) and in 20 healthy female controls (mean age 29 ± 8.36 years)

Results: The BMD at the lumbar spine and left femur was significantly reduced in SLE patients than the normal controls, while not at the lower end of forearm. The BMD of the femur and the lower end of forearm showed an inverse relation to the disease duration and age of the patients. Comparison of BMD between arthritic and non arthritic patients revealed no significant difference between both groups (p > 0.05). Also, comparison of BMD between patients with regular/irregular menstrual cycles and patients with amenorrhea/menopause revealed no significant difference between both groups (p > 0.05). The BMD at all measured sites showed an inverse relation to the total cumulative steroid dose, whereas, no relation was found between it and the dose of steroids per day or per year. On classification of patients according to the dose of steroids, no significant difference of BMD was found between the patients on <10 mg corticosteroids / day and the patients on ≥ 10 mg corticosteroids / day except at the femoral neck there was significant difference between both groups (p < 0.05).

Conclusion: Low BMD is prevalent in SLE and the use of steroids is a significant contributor to bone loss.

Key words: Systemic Lupus Erythematosus – Osteoporosis – Bone Mineral Density – Steroids – Dual Energy X-ray Absorptiometry.



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