Summary And Conclusion

Systemic lupus erythematosus (SLE) is a heterogeneous, multi-aetiological systemic autoimmune disease with various organ involvements, encompassing mild to moderate forms, and also severe progressive variants ***(Mok et al., 2010)***.

The long term administration of immunosuppressive medication can contribute to impaired vitamin D homeostasis **(*Alele and Kamen, 2010)*.**

The symptoms of vitamin D deficiency are non specific, and include musculoskeletal pain, paraesthesiae and cramps that are commonly experienced by patients with SLE and therefore may be overlooked **(*Cutolo and Otsa, 2008*).**

Vitamin D is recognized as an important immune modulatory factor involved in autoimmune rheumatic disease such as SLE as it inhibits dendritic cells differentiation, inhibits pathogenic pro-inflammatory T cells and play an important role in the maintenance of B-cell homeostasis **(*Cutolo et al .,2009*).**

Therefore, This study was conducted to assess vitamin D status in patients with SLE and its relation to disease activity.

For this purpose 30 SLE patients, who were attending the out-patient clinic and in-patients of the Rheumatology and Rehabilitation department of Benha University Hospitals and fulfilling the American revised criteria for diagnosis of SLE ***(Hochberg,1997*) ,** were studied in comparison to thirty healthy age and sex matched controls.

✵ **All subjects were subjected to:**

1. Full medical history: including personal history ,complaint , present history, past history, family history.

2. Complete physical examination.

3.Assessment of diseases activity using Systemic Lupus Erythematosus Disease Activity Index (SLEDAI).

4.Routine laboratory investigations of SLE which include: CBC, ESR, 24 hours urine protein, serum creatinine, serum C3, serum C4, ANA, anti-ds DNA.

5.Laboratory investigations to assess serum 25(OH) vitamin D and calcium levels.

❖ **The results of our study showed the following:**

- All patients were females (100%), their ages ranged from 20 to 41 years (mean ± SD 30.26±4.89 years). All controls were also females, their ages ranged from 20 to 45 years (mean ± SD 29.76±5.61 years). Patients and controls were age matched, where $t = 0.36$ and $p>0.05$.

- Seventy –three percent had mucocutaneous manifestation, 43.3 % had fever, 33.3% had arthralgia /arthritis, 16.6% had serositis, 16.6% had pulmonary manifestation, 20% had cardiac manifestation ,26.6% had renal manifestation, 23.3% had neurological manifestations and 50% had hematological manifestations.

- All SLE patients (100%) had positive ANA while 25 patients (83.3%) had positive Anti- ds DNA.

- The means of patients' laboratory profile were as follows; HB level was (mean ±SD 10.48±1.59gm), RBCs count was (mean ±SD 3.98±0.59cells/cmm), WBCs count was (mean ± SD 6.12±2.35cells/cmm), platelets count was (mean ± SD 245.7±70.33cells/cmm), ESR was (mean ±SD 64.37±41.72mm), serum creatinine was (mean ± SD 0.91± 0.25mg/dl), C3 was (mean ± SD 62.56 ± 34.76mg/dl) while C4 was (mean ±SD 13.10 ±7.90mg/dl) and 24h protein in urine was (mean ± SD 596.66 ± 440.01mg/dl).

- SLE patients had significantly lower serum 25 (OH) vitamin D levels (16.96±10.96 vs. 41.60±8.17ng/ml) and serum Ca levels (7.63 ±1.36vs.9.62 ± 0.59mg/dl) than healthy controls ($p < 0.001$).

- SLE patients were classified according to disease activity score (SLEDAI) into; 13.3 % had mild activity, 33.3% had moderate activity and 53.3% had severe activity.

- SLE patients were classified based on their 25(OH) vitamin D levels into; 53.3% had deficient status, 30%had insufficient status and 16.7% had normal levels.
- There were none statistical significant differences of ages among SLE patients with different vit D status (P>0.05).
- A statistically significant relationship between 25(OH) vitamin D status and SLE disease activity were found, where p <0.05.
- Patients with photosensitivity and cardiac manifestations had highly statistical significantly lower levels of 25 (OH) vit. D (p<0.001). Patients with renal and hematological manifestations as well as patients suffering from arthralgia/arthritis had statistically significant lower levels of 25 (OH) vit. D, where p < 0.05.
- Non statistically significant differences of 25 (OH) vitamin D serum levels between patients with or without malar rash, oral ulcers, alopecia, serositis, pulmonary manifestations or neurological manifestations(p >0.05).
- SLE patients with deficient 25(OH) vitamin D status had highly statistical significantly lower WBCs count, platelets count and C3 level, where p<0.001. Also they had statistically significant lower C4 level, higher ESR 1^{st} h (p<0.05). SLE patients with insufficient 25(OH) vitamin D status had significantly lower 24 h protein in urine, where p<0.05.