

## IMMUNOMODULATION IN IRAQI PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS THROUGH VITAMIN D<sub>3</sub> SUPPLEMENTATION

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### ABSTRACT

Vitamin D deficiency is worldwide problem with serious health effects on SLE disease and one of the most important risk factors for immune system. 1, 25-Dihydroxyvitamin D<sub>3</sub> (1, 25(OH) 2D<sub>3</sub>) can modulate immune responses. Systemic Lupus erythematosus (SLE) is an autoimmune disease more prominent in women characterized by wide variety of auto antibodies production, some of which are pathogenic, immune complex deposition and various clinical systemic manifestation that effect various organ. Patients with systemic lupus erythematosus, especially those with anti-dsDNABs and increased disease activity, had decreased 1, 25(OH) 2D<sub>3</sub> levels, suggesting that

Vitamin D might play a role in regulating autoantibody production. To address this, we examined the effects of 1, 25(OH) 2D<sub>3</sub> on anti-dsDNA concentration and its relation to organ involvement. Serum 1, 25(OH) 2D<sub>3</sub> was significantly lower in total SLE patient ( $4.202 \pm 5.3$  ng/ml) ranged from (0.021-28.71) than healthy control was ( $34.78 \pm 6.49$  ng/ml), There was highly significant difference ( $p=0.000$ ) between two groups of SLE patients, (SLE patients before receiving Ca/Vitamin D and SLE patients after receiving Ca/Vitamin D) depended on the serum 25(OH) D<sub>3</sub> level and Anti-dsDNA concentrations. Dramatically, levels of Serum 25(OH) D<sub>3</sub> increased under vitamin D supplementation from ( $3.204 \pm 3.6$  ng/ml to  $28.90 \pm 4.84$  ng/ml) while anti-dsDNA levels decreased from ( $243.3 \pm 82.4$  to  $47.40 \pm 26.77$  U/ml). Moreover, observed high significant negative correlation between vitamin D and anti-dsDNA. Also, strong significant association between vitamin D deficiency and organ involvement.