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Vitamin D antibodies in systemic sclerosis patients: Antibodies presence and clinical and laboratory correlations

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Background: Vitamin D is a pivotal factor not only in disorders that involve calcium metabolism, such as osteoporosis and osteomalacia as well as an immunomodulatory effect as noted in several autoimmune conditions in diseases. Very low levels of vitamin D were also demonstrated in systemic sclerosis (SSC) patients. Patients with vitamin D deficiency showed longer and more severe disease. Furthermore, an inverse relationship was found between skin involvement and vitamin D serum concentrations. Associations were found Between Systemic Sclerosis pattern of disease and Scleroderma-Specific Autoantibodies. Novel research demonstrated the presence and importance of anti-vitamin D antibodies in SLE; this motivated our research team to seek for similar antibodies among scleroderma patients.

Materials and Methods: Our study population comprised of 55 scleroderma patients and 41 donors from our hospital staff served as the control group. Levels of IgG & IgM autoantibodies against Vitamin D2 and D3 were compared between scleroderma patients & controls. Furthermore, scleroderma patients were assessed for disease severity and auto-antibodies profile was taken.

Results: We found significant differences in the levels of Anti vit D2 antibodies between scleroderma & controls. IgM hydroxyl vitamin D levels were higher among scleroderma group as compared to controls (0.48 ± 0.22 vs. 0.39 ± 0.33 , $p=0.013$, Mann Whitney test). However, we found no significant differences in the levels of Anti DiHydroxyl vitamin D antibodies between scleroderma & control. Furthermore, no correlation was found to other auto-antibodies or disease severity or sub-organ damage.

Conclusions: To our knowledge, this is the first time these novel anti-vitamin D antibodies are studied in scleroderma patients. Furthermore, it is the first time a correlation to hydroxy vitamin subgroup is identified. Further research and evaluation regarding the role, pathophysiological significance and therapeutic potential is required.

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