EDITORIAL

Vitamin D Deficiency and Rheumatic Diseases

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Vitamin D has well-known effects on calcium, phosphate and bone metabolism, and thus can have direct effects on the skeleton system. Vitamin D deficiency has been reported in numerous metabolic, degenerative, inflammatory and autoimmune rheumatic diseases. Vitamin D deficiency, due to insufficient sunlight exposure, dietary intake and/or abnormalities in its metabolism, has been associated with rheumatic diseases and both the direct and indirect effects of vitamin D might be related to the risk of developing a rheumatic disease or the degree of disease activity. (1)

The evidence at the cellular level exists from the facts that there is the presence of the vitamin D receptors on extra-osseous cells, such as cartilage cells, sinoviocytes, muscle cells; there is a proven role of vitamin D in the control of the transcription of genes involved in rheumatic diseases and the activation of vitamin D not only present in the kidneys, but also in monocyte-macrophage and lymphocytic cell lines. (1)

While comparing the serum vitamin D levels in patients with psoriatic arthritis (PsA), rheumatoid arthritis (RA) and with osteoarthritis (OA), a high prevalence of serum vitamin D insufficiency/deficiency has been found in all the types of arthritis. Patients with PsA might have higher levels of vitamin D than patients with RA and this has been further shown to be associated with disease activity and functional ability. (2)

Arthralgia is a common presenting symptom of many rheumatic diseases. The findings of Heidari *et al* (3) indicated significant association of vitamin D deficiency and arthralgia. Serum 25-OHD deficiency was associated with 3.01 times increased risk of arthralgia.

Similarly the study of Touma *et al* (4) reported a high prevalence of vitamin D insufficiency among psoriatic arthritis (PsA) patients.

Even in paediatric rheumatology patients as high as twenty percent of patients are vitamin D deficient. Patients with autoimmune disorders are more likely to be vitamin D deficient than patients with nonautoimmune conditions a shown in the study of Pelajo *et al* (5)

However, there are contrary reports suggesting no correlation between 25(OH)D serum values and rheumatic disorders.

In a study of Sahebari *et al* (6) no correlation between 25(OH)D serum values and DAS over a short duration of disease course could be established. However, in early RA, 25(OH) D serum values are lower than the established RA in their study.

Similarly, the study of Pakchotanon *et al* (7) suggested that there is no association of serum 25(OH)D levels with disease activity or functional status of RA patients. There are no associations between 25(OH)D levels and number of tender and swollen joint counts, DAS-28 score, HAQ score or rheumatoid factor (RF) and/or anti-cyclic

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citrulinated peptide (CCP) positivity. Still there is no consensus on the correlation between vitamin D (VitD) deficiency state and lupus disease activity or on the importance of sectional measurement of serum VitD in the prediction of disease activity of Lupus disease. (8)

Although majority of studies link vitamin D deficiency to various rheumatic disorders but they remain observational in nature. (9) Evidence from high quality, prospective, double-blind, placebo-controlled, randomized trials are far less to recommend preventive vitamin D supplementation as an universal management programme for many rheumatic conditions in which deficiency of Vitamin D has been implicated even without undergoing Vitamin D estimation.

However, with the available data and till more evidences emerge, it is recommended that vitamin D estimation should be made a part of diagnostic protocols of every rheumatic disorders and every Vitamin D deficient patients should be adequately treated for more successful treatment outcome of rheumatic disorders.

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