

Vitamin D deficiency confirmed as common across a range of rheumatic conditions

EurekAlert

Rome, Italy, Friday 18 June 2010: Two separate studies have shown that vitamin D deficiency is common in patients with a range of rheumatic diseases, with over half of all patients having below the 'normal' healthy levels of vitamin D (48-145 nmol/L) in their bodies. A further study assessing response to vitamin D supplementation found that taking the recommended daily dose did not normalise vitamin D levels in rheumatic disease patients. The results of these three studies were presented today at EULAR 2010, the Annual Congress of the European League Against Rheumatism in Rome, Italy.

A UK study¹ of 180 patients aimed to assess mean levels of vitamin D in patients with inflammatory joint diseases, osteoarthritis and myalgia (muscle pain that, when experienced long term may be associated with nutritional deficiency). Data on vitamin D levels were gathered and results showed that 58% of individuals with a rheumatic condition had levels below that clinically considered to be 'sufficient' in healthy subjects (48-145 nmol/L).

An Italian study² of 1,191 RA patients aimed to determine a correlation between vitamin D deficiency and several different clinical measures of disease activity. Researchers found that, regardless of supplementation, levels of 25-hydroxyvitamin D (25(OH)D), (a standard clinical measure of vitamin D in the blood), were lower than healthy levels (<50 nmol/L) in 85% of the patients not taking a vitamin D supplement and in 60% of those taking 800 IU or more vitamin D daily as a supplement. In non-supplemented patients levels of 25(OH)D significantly correlated with three measures of disease activity - the Health Assessment Questionnaire Disability Index, (p=0.000) the Mobility Activities of Daily Living Score (p=0.000) and the Number of Swollen Joints count (p=0.000).

"We have seen in studies that vitamin D deficiency is common in patients with a range of rheumatic diseases, and our results have confirmed this using several clinically accepted measures of disease activity," said Dr. L. Idolazzi, of the Rheumatology Unit, University of Verona, Italy. "What we need to see now is a range of long term studies, which examine the clinical response of patients to vitamin D supplementation."

Furthermore, a third study undertaken in Italy³ aimed to evaluate the affect of vitamin D supplementation in patients with inflammatory autoimmune disease (IAD) and non-inflammatory autoimmune disease (NIAD). Following supplementation, only 29% patients reached vitamin D levels greater than the level clinically considered to be 'sufficient' in healthy subjects, with no significant differences in vitamin D levels observed between the IAD and NIAD groups.

"Whilst it is well known that hypovitaminosis D is often seen in patients with inflammatory autoimmune diseases, the effects of supplementation have not been fully investigated in this setting," said Dr. Pier Paolo Sainaghi of the Immuno-Rheumatology Clinic, A. Avogadro University of Eastern Piedmont, Novara, Italy and

author of the third study. "The results of our study show that daily 800-1,000 IU supplementation is not sufficient to normalise vitamin D levels in patients with rheumatologic or bone conditions. What is unclear is whether a higher dose would be more effective."

Study designs and key statistics

The UK study¹ involved patients with a diagnosis of rheumatoid arthritis (RA), osteoporosis, or unexplained muscle pain, (total n=90, 30 from each group). These patients were matched with a control group of patients presenting with chronic back pain for a minimum of 6 months (n=90). The RA patient group registered median levels of vitamin D of 36 nmol/L (range 16-85 nmol/L, p=0.045) and in osteoporosis patients, these levels were slightly lower with a median value of 31 nmol/L (range 7-82 nmol/L, p=0.005). Patients with unexplained muscle pain had equally low median levels of vitamin D at 31 nmol/l (range 11-79 nmol/L, p= 0.008).

In the first Italian study² of 1,191 patients (85% women) from 22 rheumatology centres, researchers measured levels of 25(OH)D, alongside parameters of disease activity, calcium intake, sun exposure and bone mineral density. The association found by researchers between disease activity scores and vitamin D levels remained statistically significant when adjusted for both sun exposure and body mass index (BMI), both known risk factors for vitamin D deficiency. Significantly lower 25(OH)D levels were found in patients with active disease compared with those in disease remission (mean level 21.8 nmol/L 25(OH)D vs. 23.6 nmol/L respectively, p=0.057), and in those who were not responding to treatment compared to patients with a good response to treatment (20.5 nmol/L vs. 23.4 nmol/L p=0.020).

In the third Italian study³, 100 patients (43 with IAD and 57 with NIAD) received daily supplementation of 800-1000 IU of cholecalciferol (a form of vitamin D often used to fortify foods) over the course of six months. Abstract Numbers: FRI0509, SAT0093, SAT0506

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