Evaluation Of 25-Hydroxyvitamin D Levels in Rheumatologic Diseases

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Background: Previous evidence indicates an association between vitamin D deficiency and autoimmune diseases. The aim of this study was to evaluate serum 25 hydroxyvitamin D (25OHD) and bone mineral density (BMD) in patients with rheumatologic diseases (RD) in Argentinean patients. In addition, 25OHD levels were analyzed in function of disease activity.

Methods: This retrospective study evaluated 106 patients with RD (64 with rheumatoid arthritis (RA), 12 spondyloarthropathies (SA), 13 systemic lupus erythematosus (SLE) and 17 other collagenopathies (OC) [vasculitis, scleroderma, indiferenciateted disease connective tissue, superposition syndrome of connective tissue disease]) and was compared with a control group (CG, n=102) matched by age (CG= 55.82±1.48 years; RD= 55.28±1.30, sex and body mass index. All the patients were from Rosario (32º52´18´´S) and Buenos Aires (34º36´14´´S) cities. Exclusion criteria: supplemented with vitamin D, pregnancy, intestinal malabsorption, chronic liver or kidney disease or cancer. Date are expressed as mean±SEM. Differences between groups were analyzed using the Mann–Whitney or Kruskal–Wallis test. Correlations were performed with Spearman's correlation test. The difference was considered significant if $p<0.05$.

Results: No differences between groups were observed in serum calcium, phosphatemia, urinary calcium, parathormone and urinary deoxipiridinoline. Significant differences were found in alkaline phosphatase (CG= 102.90±5.40 UI/l; RD= 167.2±8.59) and 25OHD (CG= 25.64±1.06 ng/ml; RD= 19.17±0.66). 25OHD significantly correlated with erythrocyte sedimentation rate (ERS) [r= -0.26] and reactive C-protein (RCP) [r = -0.27] as acute phase reactants. RD patients had significant lower 25OHD levels (RA= 19.89±0.81; SA=15.64±1.76; SLE= 19.81±2.49; and OC= 18.44±1.48) than CG (25.64±1.06 ng/ml). No correlation between 25OHD levels and DAS-28 and HAQ-DI scores were found. However, lower values of 25OHD were found at higher scores: HAQ-20 ≤2= 22.41±1.45 ng/ml, HAQ-20 >2= 18.80±0.95, p=0.047; DAS28 ≤3.2= 21.43±1.62 ng/ml, DAS28 >3.2= 19.78±0.95l, p=0.157. Activity scores in others RD couldn´t be analyzed because small number of patients. No significant differences were found in lumbar spine BMD between premenopausal or postmenopausal (postM) patients, but femoral neck BMD was significantly lower in postM RD patients (0.775±0.026 g/cm^2; T-score −1.94±0.20) than in postM CG patients (0.802±0.020; T-score −1.24±0.16).

Conclusion: In both groups 25OHD levels were under 30 ng/ml. However, 25OHD levels were lower in RD patients (deficiency) than CG (insufficiency). Lower values of 25OHD were found at higher ERS and RCP in all RD and at higher activity disease scores in RA.