CHANGES IN BONE METABOLISM IN PATIENTS WITH ACTIVE RHEUMATOID ARTHRITIS TREATED WITH ANTI-TNF ALPHA THERAPY

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Secondary osteoporosis (OP) is a well-recognized feature of rheumatoid arthritis (RA). Treatment with TNF alpha blockers, might influence bone metabolism and prevent structural bone damage in RA, in particular at the periarticular level.

To assess the influence of anti-TNF alpha therapy, on bone metabolism in RA patients.

36 RA patients were treated with stable therapy of prednisone (7.5 mg/day) and methotrexate (MTX=10 mg/week). Twenty-four received anti-TNF alpha therapy. A control group included 12 RA patients only with stable therapy (prednisone and MTX). Quantitative Ultrasound (QUS) bone densitometry was obtained at the metaphyses of the proximal phalanges of both hands with a DBM Sonic 1200 QUS device (IGEA, Carpi, Italy). Bone mineral density (BMD) of the hip and lumbar spine were performed with a densitometer (GE Lunar Prodigy, USA) at baseline at after 6 months. Soluble bone turnover markers [osteocalcin (BGP) and deoxypyridinoline/creatinine ratio (Dpd/Cr)] were measured using ELISA tests.

AD-SoS values were found increased by 1.3% after 6 months of treatment in the RA patients treated with anti-TNF alpha therapy. On the contrary, the Ad-SoS levels decreased by 4.6% during the same period in the untreated RA group. BMD increased by 0.2% at lumbar spine and 0.1% at the hip in TNF alpha blockers-treated patients and decreased by 0.8% and 0.6% (at lumbar spine and at the hip, respectively) in RA patients without anti-TNF alpha therapy. However, BMD variations were not significant. In RA patients treated with TNF alpha blockers, BGP levels were found significantly increased (11.3±1.2 mg/ml vs 21.2±1.2 mg/ml; $p<0.01$) and Dpd/Cr levels were found significantly decreased (8.8±1.1 nM vs 4.2±1.8 nM; $p<0.01$) at 6 months when compared to baseline values. On the contrary, there were no significant differences in the untreated RA patients concerning these latter parameters (BGP=11.2±2.1 mg/ml vs 11.6±1.8 mg/ml and Dpd/Cr= 6.9±2.4 nM vs 8.2±1.8 nM, respectively).

During 6 months of treatment of RA patients with TNF blockers, bone formation seems increased while bone resorption seems decreased. The reduced rate of OP seems supported by the same mechanisms involved in the decreased bone joint resorption during anti-TNF alpha therapy.