SPONDYLOARTHROPATHIES

Synergistic therapy protects bone in patients with AS

Patients with ankylosing spondylitis (AS)—a chronic inflammatory disease—commonly have decreased bone mineral density (BMD) that can lead to nontraumatic fractures. Currently, antiosteoporotic agents, such as bisphosphonates, are used to treat these symptoms. Evidence from a study by Kang *et al.*, however, suggests that targeting both bone destruction and inflammation with a combination of bisphosphonates and tumor necrosis factor (TNF) blockers is preferable to conventional therapy for increasing BMD in patients with AS. "Although it is known that BMD is decreased in patients with AS, the effect of anti-TNF agents on this process is unclear," explains Sung-Hwan Park, the study's lead investigator.

The researchers assessed baseline BMD in 90 patients with AS and assigned them to one of four treatment groups: NSAIDs and/or sulfasalazine and/or methotrexate (group 1; conventional treatment; $n = 40$), bisphosphonate and conventional treatment (group 2; $n = 20$), anti-TNF agents and conventional treatment (group 3; $n = 19$) and bisphosphonate, anti-TNF agents and conventional treatment (group 4; $n = 11$). At follow-up of approximately 13–16 months, patients in groups 1 and 2 had either unchanged or decreased femur BMD. By contrast, femur BMD was elevated in patients assigned to groups 3 and 4; indeed, trochanter BMD was significantly increased in comparison with baseline BMD ($P = 0.001$) in patients receiving the group 4 regimen. Furthermore, the investigators noted that patients in group 4 without syndesmophytes—which can affect the BMD of the lumbar spine—also had a significantly increased lumbar spine BMD in comparison w baseline ($P = 0.014$). No further differences were observed between treatment groups with respect to BMD changes in lumbar spine, femoral neck and upper neck.

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Following statistical analysis, the researchers found that the BMD changes observed in the trochanter of patients with AS (and also in the lumbar spine of those without syndesmophytes) correlated with reduced erythrocyte sedimentation rate and decreased C-reactive protein levels, suggesting that a reduction in inflammation might be linked to the observed BMD changes. "This study demonstrates the additive and synergistic role of these agents via their antiresorptive and anti-inflammatory effects," concludes Park, who goes on to say that "dual-action antibodies that decrease both inflammation and bone destruction might prevent osteoporosis in rheumatic diseases such as AS".

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Original article Kang, K.Y. *et al.* The change of bone mineral density according to treatment agents in patients with ankylosing spondylitis. *Joint Bone Spine* doi:10.1016/j.jbspin.2010.05.010