The Change of Bone Mineral Density (BMD) according to treatment agents in patients with Ankylosing Spondyilitis (AS)

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Objectives: The purpose of this study was to access the effects of treatment on bone mineral density (BMD) by types of agents in patients with ankylosing spondylitis (AS).

Methods: Medical records of 87 patients with AS were reviewed retrospectively. Bone mineral densities of the lumbar spine and neck, upper neck and trochanter of right femur were measured annually using dual-energy X-ray absorptiometry (model: LUNAR, GE medical systems). 87 Patients were divided as one of the following 4 groups: conventional treatment (NSAIDs ± DMARDs), bisphosphonate ± conventional treatment, anti-TNF agents ± conventional treatment or bisphosphonate + anti-TNF agents ± conventional treatment. We evaluated the change of BMD in patients with AS according to treatment group which were used from first BMD to second BMD.

Results: In 87 patients, male and female were 69 and 18. The average age was 38 years and the mean disease duration was 7.8 years. In results of 1st BMD, normal BMD, osteopenia and osteoporosis were 9, 47 and 28 patients. The patients in group of conventional treatment, bisphosphonate, anti-TNF agents and bisphosphonate + anti-TNF agents were 41, 20, 17 and 9 patients. The measures of BMD were showed tendencies to the most increase in the group that was used concurrently bisphosphonate and anti-TNF agent in both lumbar spine and femur. But the percentages of changes of BMD were statistically significant only in trochanter of femur (-0.2%, 0.3%, -1.3% and 5.4%; p=0.02).

Conclusions: The BMDs of AS patients were increased more in treatment of concurrent bisphosphonate and anti-TNF agents. So, we look forward that early use of anti-TNF agents in AS patients with osteoporosis will improve low BMD as well as disease activity.