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Effects of long-acting testosterone undecanoate on bone mineral density in middle-aged men with late-onset hypogonadism and metabolic syndrome: results from a 36 months controlled study.

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Source

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Abstract

We evaluated the effects of long-term testosterone replacement therapy (TRT) on the bone mineral density (BMD) in obese patients with metabolic syndrome (MS) and late-onset hypogonadism (LOH). Sixty men (mean age 57 ± 10) with low serum testosterone (T < 320 ng/dL) and MS regardless the presence of osteoporosis were enrolled. Forty men received intramuscular T-undecanoate (TU) four times/year for 36 months and 20 age-matched hypogonadal men with MS in whom T treatment was contraindicated were used as controls. Hormonal, biochemical markers, vertebral and femoral BMD by dual-energy x-ray absorptiometry were measured. At baseline, overall patients had mild osteopenia (lumbar BMD= 0.891 ± 0.097 g/cm(2); femoral BMD= 0.847 ± 0.117 g/cm(2)). TU induced a significant improvement of bone mass after 36 months (lumbar BMD=1.053 ± 0.145 g/cm(2); p < 0.002; femoral BMD=0.989 ± 0.109; p < 0.003 g/cm(2)) with a 5%/year increase and a significant reduction in hs-CRP without changes in body mass index. A direct relationship between serum T and BMD increments at the lumbar (r(2) = 0.66, p < 0.0001) and femoral (r(2) =0.52, p < 0.0001) sites was demonstrated. Study adherence was 50% without serious side effects. Long-term TRT in middle-aged men with LOH and MS determines a significant increase in both vertebral and femoral BMD related to increased serum T levels, probably independently from estradiol modifications.

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