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News on current events in osteoporosis and rheumatology

In patients with a suppressed bone turnover, strontium ranelate relaunches bone formation

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Several medications have proved to be effective in reducing the fracture risk in patients with osteoporosis. However, the optimal duration of use of these medications and the effects of changes between treatment strategies remain to be established. The latter are of special clinical value in patients who have been on bisphosphonate therapy for years and present with persistent high fracture risk. To gain insight into the effects of strontium ranelate therapy after long-term biphosphonate treatment (average 32 months) in patients with suppressed bone turnover, the authors [1] performed paired transiliac crest biopsies from 15 patients previously treated with biphosphonates and presenting with persistent osteoporosis.

Patients were treated with 2 g strontium ranelate daily and subjected to a second biopsy after 6 months or 12 months of treatment. After 1 year of treatment with strontium ranelate in 10 patients, a significant increase in bone volume by +30% (BT/TV, % 11.12 ± 3.78 vs. 8.53 ± 2.14) with improved trabecular interconnection by 48% (TBPF 0.69 ± 0.52 vs 1.35 ± 0.63) and increased trabecular thickness by +10% (Tb.Th 99.39 ± 9.89 vs. 89.99 ± 10.96) were observed. These structural changes were explained by activated bone formation indicated by increased osteoid surface (OS/BS %, 12.04 ± 6.81 vs. 7.97 ± 5.6) despite the presence of persistent suppression of bone resorption and unchanged low osteoclast number (NOc/BPm, mm-1, 0.011 ± 0.016 vs. 0.035 ± 0.065).

These data confirm the bone-forming property of strontium ranelate on paired bone biopsies, highlighting its capacity to relaunch bone formation by generating new bone.

1. Busse B et al. *J Bone Miner Res*. 2007;Abstract W477.22:S484-S485.

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Bone biopsies in patients, who were previously treated by long-term therapy of bisphosphonates, were performed in 10 patients at baseline and after 1 year of treatment with strontium ranelate.

Strontium ranelate relaunches bone formation by generating new bone.