Treatment With Romosozumab Lowers Risk of Fracture in Postmenopausal Women With Osteoporosis

Twelve months of treatment with romosozumab followed by treatment with alendronate resulted in a lower incidence of fractures in postmenopausal women with osteoporosis compared with alendronate treatment alone.

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May 30, 2022 – Postmenopausal women with osteoporosis and a previous fragility fracture who were treated with romosozumab for 12 months followed by alendronate had a 48% lower risk of new vertebral fractures and a 27% lower risk of clinical fractures than women who received alendronate alone.

Kenneth G. Saag, MD, from the University of Alabama in Birmingham, and colleagues reported their findings in the October 12, 2017, issue of the *New England Journal of Medicine*.

Alendronate, an antiresorptive agent, is a first-line therapy for osteoporosis. The medication of interest in this study, romosozumab, is a monoclonal antibody that inhibits sclerostin, resulting in increased bone formation and decreased bone resorption. Few head-to-head studies exist which compare the effectiveness of antiresorptive agents like alendronate and bone-forming agents like romosozumab.

In this phase 3, double-blind trial, 4093 participants were randomly assigned to receive monthly subcutaneous romosozumab (210 mg) or weekly oral alendronate (70 mg) for 1 year. After 12 months, all patients received weekly oral alendronate until at least 330 patients had experienced a clinical fracture and all patients had completed their 24-month visit.

Patients in the romosozumab-to-alendronate group had a 48% lower risk of new vertebral fractures compared with patients receiving only alendronate (127 of 2046 [6.2%] vs 243 of 2047 [11.9%]; $P < .001$). Treatment with romosozumab was also associated with a 27% lower risk of clinical fracture (198 of 2046 [9.7%] vs 266 of 2047 [13.0%]; $P < .001$). Additionally, the romosozumab-to-alendronate group had a 19% lower risk of nonvertebral fractures ($P = .04$) and a 38% lower risk of hip fractures ($P = .02$).

During the first year, injection-site reactions were reported more frequently in the romosozumab group compared with the alendronate group (4.4% vs 2.6%). In the study's second year, 1 case of osteonecrosis of the jaw was noted in each group, as well as 2 cases of atypical femoral fracture in the romosozumab group compared with 4 cases in the alendronate group. Importantly, 50 patients (2.5%) in the romosozumab group and 38 patients (1.9%) in the alendronate group reported serious cardiovascular adverse events (odds ratio, 1.31; 95% CI, 0.85-2.00).

"It is worth nothing that romosozumab outperformed an effective drug," stated Dr. Saag and colleagues.

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