Romosozumab Lowers Risk of Fracture in Postmenopausal Women

Postmenopausal women with osteoporosis who were treated with romosozumab for one year have a reduced risk of fracture.

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May 4, 2021 – In postmenopausal women with osteoporosis who were at high risk for fracture, romosozumab treatment for 12 months followed by alendronate resulted in a lower risk for fracture compared with those women who were treated with alendronate alone, according to the results of a new study.

Kenneth G. Saag, MD, with the Department of Clinical Immunology and Rheumatology at the University of Alabama in Birmingham, Alabama, and colleagues reported their findings in the October 17, 2017, issue of the *New England Journal of Medicine*.

Romosozumab is a new bone-forming monoclonal antibody that binds to and inhibits sclerostin. Additionally, romosozumab is known to both increase bone formation and decrease bone resorption. The current study is a phase 3, multicenter, international, randomized, double-blind trial, which included 4093 postmenopausal women with osteoporosis and a history of fragility fracture. Each patient was randomized to receive monthly subcutaneous romosozumab (210 mg) or weekly oral alendronate (70 mg) for 12 months. Both groups then received alendronate for an additional 12 months.

The primary endpoints were defined as the cumulative incidence of a new vertebral fracture at 24 months and the cumulative incidence of clinical fracture at the time of primary analysis. A clinical fracture was defined as a nonvertebral fracture or a symptomatic vertebral fracture. The incidences of a nonvertebral fracture or a hip fracture were included as a secondary endpoints.

Results showed that over a period of 2 years, patients who received romosozumab and then alendronate had a 48% lower risk of a new vertebral fracture compared to those patients who received alendronate alone (6.2% vs 11.9%; risk ratio, 0.52; 95% confidence interval [CI], 0.40 to 0.66; $P < .001$). Romosozumab reduced the risk of clinical fracture by 27% in those patients in the romosozumab-to-alendronate group versus the alendronate-to-alendronate group (9.7% vs 13.0%; hazard ratio [HR], 0.73; 95% CI, 0.61 to 0.88; $P < .001$).

Cardiovascular adverse events were observed more often with with romosozumab than with alendronate (2.5% vs 1.9%). During the alendronate-only treatment period, the authors observed two instances of osteonecrosis of the jaw and six instances of atypical femoral fracture.

“Rapid gains in bone mineral density from bone-forming therapy with romosozumab were associated with a lower risk of fracture than with alendronate within 1 year and over the course of romosozumab followed by alendronate. Hip fractures were less frequent with romosozumab followed by alendronate than with alendronate alone, suggesting an important benefit and challenging the common treatment practice of first-line use of alendronate in women who have had a previous fracture,” concluded Dr Saag and colleagues.

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