

BONE

Monitoring BMD after bisphosphonate treatment: is it worth it?

“Monitoring bone mineral density (BMD) in the first 3 years after starting postmenopausal women on a potent bisphosphonate is unnecessary and may be misleading,” says Katy Bell from the University of Sydney, Australia. Bell *et al.* question the value of BMD monitoring in this population in a new study published in the *British Medical Journal*.

Guidelines vary on the use of BMD monitoring in the first few years after starting bisphosphonate treatment. Some previous studies have found that women with apparently no change or even a loss in BMD while on treatment still get clinical benefit in terms of fracture prevention. Furthermore, BMD changes vary widely from person to person, suggesting that this measurement might not be suitable for monitoring the effects of bisphosphonate treatment at an individual level.

To evaluate the usefulness of BMD monitoring, Bell and colleagues analyzed data from 6,459 postmenopausal women with low BMD enrolled in the Fracture Intervention Trial, a randomized controlled trial assessing the effects of alendronate versus placebo. BMD measurements were taken at 1, 2 and 3 years after commencement of therapy. “We wanted to estimate the true variation in bone density response between individuals as well as the background random variation that exists within individuals,” Bell explains. These variations were estimated using mixed models.

Around 97.5% of the patients treated with alendronate had increases in hip BMD of at least 0.019 g/cm² after 3 years. Bell describes that, with regard to BMD changes, “within-person variation was

several-fold greater than the between-person variation in treatment effects.” These results indicate that, although nearly all women showed gains in BMD during treatment, the large variability associated with the measurement in individual patients obscured the true treatment response.

Thus, Bell and colleagues concluded that monitoring BMD in the early stages after starting bisphosphonate treatment could give misleading results, and this drain on health-care resources should be avoided.

Lisa Richards

Original article Bell, K. J. *et al.* Value of routine monitoring of bone mineral density after starting bisphosphonate treatment: secondary analysis of trial data. *BMJ* 338, b2266 (2009).