BONE

Bisphosphonate therapy after cardiac transplant reduces fracture risk

Fracture risk is reduced and bone mass is preserved in recipients of cardiac transplants treated with the bisphosphonate ibandronate during the first year after transplantation, according to a randomized, placebo-controlled trial conducted by Astrid Fahrleitner-Pammer and colleagues (Medical University of Graz, Austria).

The high doses of immunosuppressive drugs given to transplant recipients in the early post-transplant period cause bone loss and increase risk of fracture. Strategies to prevent these complications have been investigated: bisphosphonate therapy showed promise for prevention of post-transplantation bone loss, but evidence of a beneficial effect on fracture incidence was lacking.

In the current trial, 35 men who had received cardiac transplants were randomly allocated to receive 2 mg ibandronate intravenously every 3 months or a matching

placebo; all participants also received calcium and vitamin D supplementation. The first treatment was given within 24 h of transplantation, as early initiation of therapy seems to be important.

Over the post-transplant year, the mean BMD of patients in the placebo group decreased by 25% at the lumbar spine and 23% at the femoral neck; by contrast, mean BMD of ibandronate-treated patients remained the same as at baseline. Analysis of bone-turnover markers revealed that the treatment prevented the marked increase in bone resorption observed in the placebo group. Fracture rate was reduced by ibandronate treatment: incident vertebral fractures occurred in 53% of the placebo group, but in only 13% of the ibandronate group. Histomorphometric findings also demonstrated the beneficial effects of ibandronate treatment. Bone biopsy samples from three patients in the placebo

group showed a pronounced increase in the percentage of eroded surface between baseline and 6 months, whereas over the same time period, biopsy samples from three patients treated with ibandronate showed a decrease or no change in the percentage of eroded surface.

“The findings of the current analysis underline the importance of bisphosphonate treatment in the early post-transplantation period and may help to establish (parenteral) bisphosphonate therapy as a routine therapy following cardiac transplant,” concludes Fahrleitner-Pammer.

Carol Wilson

Original article Fahrleitner-Pammer, A. *et al.* Ibandronate prevents bone loss and reduces vertebral fracture risk in male cardiac transplant patients: a randomised double-blind, placebo controlled trial. *J. Bone Miner. Res.* doi:10.1359/jbmr.090216