

Does osteoporosis influence the marginal peri-implant bone level in female patients?

No contraindication exists for placing dental implants in osteoporotic patients, although osteoporosis greatly influences peri-implant bone remodeling. The findings are from a study published online in the August issue of *Clinical Implant Dentistry Related Research*.



Researchers designed the study to investigate the role of osteoporosis in the marginal peri-implant bone level. Patients included in the study were postmenopausal women with at least 1 dental implant in situ for at least 1 year.

The authors used a printed questionnaire to assess osteoporosis/osteopenia, incidence of fragility fractures, smoking habits, thyroid disorder, diabetes, and medication. Researchers categorized implants as machined, moderately rough, and rough, based on the surface roughness.

The authors evaluated peri-implant marginal bone loss (MBL) at 3 different times: at the time of implant placement (baseline), 1 year after implant placement, and in the most recent orthopantomogram. MBL was assessed mesial and distal to each implant. Researchers measured bone level changes as the vertical distance between implant abutment interface and implant apex. Marginal bone level-to-implant apex was assessed at the time of follow-up visits and compared with baseline evaluation; the distance between baseline and follow-up was considered as peri-implant bone loss per site. To obtain the actual bone loss in millimeters, the dimensional distortion was corrected by the ratio between the apparent implant-dimension and the actual implant size.

Researchers analyzed 48 women with a total of 204 implants, who they divided into 2 groups: healthy patients (control) and patients with osteoporosis and dental implants (test). Seven patients had a diagnosis of osteoporosis before implant placement, 4 at the time of implant placement, and 7 after implant placement.

Of the 48 women, 30 were healthy and 18 had a diagnosis of osteoporosis. The mean mesial MBL—statistically corrected to report the first year—was 20.66±1.2 mm (range, 25.1-2.2) in the control group and 21.16±1.3 mm (range, 25.3-2.2) in the test group. The mean distal MBL was 20.56±1.3 mm (range, 25.1-4.8) in the control group and 21.26±1.3 mm (range, 24.7-1.6) in the test group.

Researchers found significant effects of bone level at time of implant placement, jaw, rough versus moderate surface, augmentation, vitamin D intake, and internal tripod connection type at the mesial and distal implant aspects. Fixed prosthodontics had a significant influence only at the mesial implant aspect whereas internal hex connection type had a significant influence only at the distal implant aspect. The factors implant position (anterior versus posterior), machined versus moderate implant surface, presence of cement, presence of plaque, edentulous opposing jaw, edentulous implant jaw, and bisphosphonates did not have significant effects on the MBL at the mesial and distal implant aspects.

“Due to the relevance of the bone level at the time of implant placement,” the authors observed, “this study implicates to respect the bone level and not to place the implant below bone level if possible.”