

**Short Communication**

**Osteoporosis – A Silent Disease with Oral Expressions**

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Osteoporosis is often considered a “silent” disease—one that is associated with few warning signs in the early stages. Osteoporosis is one of the most common human bone diseases affecting millions of people, including over one-third of females above the age of 65. Osteoporosis is characterized by decreased bone density and weakened bones. As it progresses, osteoporosis can weaken bones to the point that they break under otherwise normal stresses. Bone loss is a central, common feature of both periodontal disease and osteoporosis. In periodontal disease, oral inflammation due to chronic infection of the tissue around the teeth results in destruction of oral bone and periodontal ligament, ultimately leading to tooth loss. Oral inflammation increases production of cytokines, such as interleukin-6 and prostaglandins, that stimulate osteoclast activity

and promote bone resorption.<sup>[1-3]</sup> Both osteoporosis and periodontal disease become more prevalent with advancing age, and individuals with a family history are at higher risk. In women, estrogen deficiency increases the risk of both oral and systemic osteoporosis. A positive association between low bone mineral density (BMD) and tooth loss has also been reported in many studies, and studies that found no association have generally been in younger populations.<sup>[3]</sup> Some therapies that improve systemic BMD also improve measures of periodontal disease. Improvement of the two conditions by the same therapies suggests an underlying connection. The three classes of therapy that have been implicated are 1) hormone replacement therapy (HRT), 2) diet supplementation with calcium and vitamin D, and 3) bisphosphonates.<sup>[4]</sup> Possibility is that osteoporosis and bone loss due to periodontal disease both proceed by the same cellular mechanism, namely increased production of cytokines, such as interleukin-6, that stimulate osteoclast activity.<sup>[3]</sup> Genetics and certain particular

lifestyles may also be related to this issue. Therefore, it is especially important for patients who have osteoporosis or who are at high risk for systemic bone loss to prevent oral inflammation through good oral hygiene and seeking help of a oral specialist and an endocrinologist as a team approach. There are different treatments for osteoporosis, all aimed at reducing the risk of fractures. Thus, estrogen treatment in postmenopausal women, selective modulators of estrogen receptors (especially raloxifene), calcitonin, a recombinant form of parathormone (teriparatide), strontium ralenate, and especially bisphosphonates, are drugs widely used in clinical practice.<sup>[5]</sup> The combination of above mentioned modulators and an effective oral health maintenance approach might prove a boon for patients suffering from osteoporosis and its linked oral problems.

## References

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