

Bisphosphonates: Implications for dental implant treatment-A review of the literature

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The main aims of this systematic review are to discuss the implications of bisphosphonate therapy on dental implants, in particular their contribution to implant failure and review the current guidelines for dental implant therapy in patients receiving bisphosphonate therapy based on the available evidence.

An electronic Medline search (1950 to 31st December 2012) was conducted to find relevant articles from both the medical and dental literature. The Cochrane Database of Systematic Reviews, the Cochrane Central Register of Controlled Trials and Embase (2000 to 31st December 2012) were also searched for appropriate studies. The literature search was completed by cross checking the references cited in all relevant identified publications. The initial search of Medline and Embase databases, regarding bisphosphonates and dental implants, yielded a total of 37 articles which were considered for the study. On further investigation, 27 studies met the study inclusion criteria, with 8 retrospective studies and 2 case series studies evaluating the success rate of dental implants in patients with a history of bisphosphonate use, while the remaining 17 articles consisted of case series and case reports.

While there are shortcomings associated with many of the reported studies, there does appear to be a certain risk associated with the both implant placement and the maintenance of osseointegrated implants in patients receiving oral bisphosphonates.

Late implant failures appear to occur in patients treated with oral bisphosphonate exposure for a period >3 years especially in patients who have existing integrated implants, while early failures appear to occur in patients treated with bisphosphonates before or at the time of implant placement.

Although the results from these retrospective studies and case series are conflicting to some extent, they have heightened awareness of the possible complication of BRONJ and bisphosphonate related implant failure from long term bisphosphonate use, be it oral or iv-bisphosphonates.

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