Treatment of Periimplant Mucositis: A Systematic Review of Randomized Controlled Trials

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Objective: *To determine the most effective treatment for periimplant mucositis in patients with dental implants compared with a control group.*

Materials and Methods: *A PubMed (MEDLINE) literature search was made of articles published up until October 2013. Randomized controlled trials (RCTs) were stratified according to their level of quality using the Jadad scale and levels of evidence (University of Oxford).*

Results: *The combinations of search terms resulted in a list of 371 titles. Of these, 114 references were finally reviewed. Finally, 7 RCTs fulfilled the inclusion criteria and were thus selected for inclusion in the systematic review. Chlorhexidine, the administration of azithromycin, and glycine powder air polishing are not effective for the treatment of periimplant mucositis. The only effective treatment seems to be the use of toothpaste with 0.3% triclosan.*

Conclusion: *Definitions of periimplant mucositis vary in the literature, and no clear criteria have been established regarding the diagnosis and treatment of this disorder. It highlights our lack of uniform treatment and need to establish additional research to fully provide effective treatments for this common condition. More, larger, and longer-term RCTs are needed in this periimplant disease. (Implant Dent 2015;24:13–18)*

Key Words: dental implant, periimplant mucositis, periimplant diseases, inflammation, mechanical debridement, chlorhexidine

In the same way as in the case of peri-implantitis,[1] the definitions of periimplant mucositis vary in the literature, and no clear criteria have been established regarding the diagnosis and treatment of this disorder. The Sixth European Workshop in Periodontology[2] held in 2008 in Göteborg (Sweden) defined periimplant mucositis as inflammation of the periimplant mucosa, without signs of supporting bone loss. Later, the Seventh European Workshop in Periodontology[3] held in Segovia (Spain) established the presence of bleeding on probing (BOP) as the key parameter for diagnosing periimplant mucositis. According to the latest definition of the American Academy of Periodontology,[4] periimplant mucositis is a disease in which the presence of inflammation is confined to the soft tissues surrounding a dental implant, with no signs of loss of supporting bone after initial bone remodeling during healing.

Experimental studies in humans have shown that the accumulation of bacterial plaque during a period of 3 weeks exhibits a similar effect in both teeth (gingivitis) and dental implants (periimplant mucositis).[5,6] Accordingly, periimplant mucositis appears as a host response to bacterial invasion, in the same way as gingivitis in relation to natural teeth.[7] Histological studies of soft tissues have shown that inflammatory infiltrations in the mucosa around implants and the gingiva around natural teeth have many features in common.[8–10] However, if bacterial plaque accumulates for more than 3 months, the inflammatory infiltrate of the periimplant mucosa is almost 3 times as great as in the case of natural teeth.[7,9] A meta-analysis conducted by Atieh et al[11] found periimplant mucositis to affect 63.4% of the patients and 30.7% of the implants.

The protocols used to treat gingivitis and periimplant mucositis are similar. However, very few studies have addressed the treatment of periimplant mucositis.[12–17] A number of therapies have been used in application to periimplant mucositis, including antiseptic agents,[15,16,18–20] the administration of antibiotics,[17] the use of glycine powder air polishing (GPAP),[21] or sodium carbonate abrasive air powdering.[14,22]

The purpose of this study was to systematically review the current literature and determine the most effective

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