Clinical application of ozone nano-bubble water (NBW3) to peri-implantitis treatment

Shinichi Arakawa
Tokyo Medical and Dental University, Japan

Peri-implantitis are chronic inflammatory diseases caused by microorganisms residing in sub-gingival bio-film. Elimination of pathogen-containing bio-films remains the primary goal of the treatment for these diseases. The topical use of a low-cost, broad-spectrum antiseptic agent with low potential for adverse reactions is also preferable in treating peri-implantitis. Ozone (O3) is attracting attention as a possible alternative antiseptic in the dental field as well as food industries. The high stability of Ozone Nano-Bubble Water (NBW3) allows for bottling and use as a disinfectant solution. A nano-bubble is less than 100 nm in diameter, and is produced by the collapse of a micro-bubble (<50 μm in diameter) in an electrolyte solution. NBW3 retains ozone gas in the form of nano-bubble, and therefore can exert anti-microbial activity for more than 6 months if it is protected against exposure to ultraviolet rays. We have used NBW3 to the peri-implantitis patients. Clinical parameter indicated that surgical treatment was necessary according to the Cumulative Interceptive Supportive therapy (CIST). Two kinds of procedures were applied to this patient. One was mechanical plaque control and the other one was a chemical plaque control (sub-gingival irrigation) with NBW3 by using WaterPikTM. Twelve weeks later, the resorbed alveolar bone around the implants has been regenerated up to 4 mm in height. These results suggested that the irrigation with NBW3 might be a promising adjunctive therapy for peri-implantitis. The use of NBW3 as an adjunct to the therapy for peri-implantitis would be promising.

Biography
Shinichi Arakawa has graduated from Dental School, Tokyo Medical and Dental University in 1986. He has completed his PhD from Tokyo Medical and Dental University and Post-doctoral studies from University of Texas, Health Science Center at San Antonio and State University of New York at Buffalo. He is the Professor of Department of Lifetime Oral Health Care Science, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University.

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