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Er:YAG Laser Support as Intervention for Treating Peri-implantitis: Clinical and Scientific Aspects

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SUMMARY

Peri-implantitis has a reported prevalence of between 6-36% of dental implants. Until today, there has been no reliable evidence suggesting which treatment method could be the most effective intervention.

What considerations do we need to have in mind? Is there any single treatment method having the potential to be the Golden Standard?

This lecture will discuss clinical as well as evidence-based aspects of Er:YAG laser-supported surgery in cases of peri-implantitis.

Photobiomodulation with a New Flat-top Handpiece for Nd:YAG Laser

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SUMMARY

Photobiomodulation (PBM) is the term applied to the manipulation of cellular behavior using low intensity light sources, working on the principle of inducing a biological response through energy transfer. PBM has been used in clinical practice for more than 40 years and its mechanisms of action at cellular and molecular levels have been studied for about 30 years. With regard to the wavelength of lasers, little is known about the use of the neodymium-doped yttrium aluminum garnet (Nd:YAG) as a biostimulator.

Recently it was demonstrated that low-level Nd:YAG laser therapy accelerates the wound healing process by changing the expression of PDGF and bFGF, genes responsible for the stimulation of cell proliferation and fibroblast growth.

The aim of this study is to present a new flattop handpiece for Nd:YAG (Genova™ handpiece, Fotona, Slovenia) that is able to irradiate a target surface with homogenous energy density, using relatively high power densities, in less time and without risk of any thermal damage. This would make the application repeatable and not operator sensitive.

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