



# The Diagnosis and Therapy of Periodontitis

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## INTRODUCTION

Periodontitis is a multifactorial illness that develops when the immune system, surroundings, and organism are out of equilibrium. Bacteria that colonize the molar surface, the gingival margin, and the subgingival environment in a vulnerable host undoubtedly play a role in the lesion's development. The loss of tooth components, which is the pathology's apex, combined with other factors like the rise in average age and related comorbidities, has fuelled the development of minimally intrusive treatments and increased demand for rehabilitation of edentulous regions. The advantages of using ozone as a supplement to non-surgical treatment over non-surgical treatment alone. 30 Caucasian patients (18 women and 12 men) between the ages of 35 and 65 were selected for this research at the Vita-Salute San Raffaele University Dental Clinic at the San Raffaele hospital in Milan. With the help of an ozone treatment session or without it, scaling and tooth planning was carried out at time T1, and the patients were then reassessed at time T2, time T3, and time T6. The periodontal probing was recorded with a PC-PUNC 15 manual probe (Hu Friedly) at time T0 (T4).

## DESCRIPTION

According to the findings, there are no statistically significant variations between the two groups' reductions in clinical periodontal markers like plaque, bleeding, and pocket depth. So it wouldn't appear that ozoral gel therapy would enhance non-surgical periodontal therapy alone. However, in patients receiving non-surgical treatment and ozone cream, clinical periodontal markers markedly improved. In light of these advantages, ozone gel in particular, its potent virucidal action can be utilized as a supplement to non-surgical treatment. In an animal paradigm, the immunomodulatory impact of a novel biomaterial electrospun from polylactic acid (PLA) and nano-hydroxyapatite (nano-HAP) loaded with doxycycline (doxy) was assessed. On the lower incisors of Wistar rats, treatment pos-

sibilities as a local non-surgical treatment of periodontitis were examined following the induction of localized periodontitis using the ligature method. The non-surgical therapy of scaling and root planing was used after the illness was induced, along with the addition of the novel substance. The effectiveness of the therapy was assessed histologically and clinically using the teeth mobility and gingival index values.

It has been established that untreated periodontitis has systemic consequences in addition to the local ones, which include permanent loss of gingiva and alveolar bone. Gross bacterial build-up in the oral region has the potential to spread pathogens throughout the body. Additionally, locally stimulated lymphocytes have the potential to increase overall inflammatory state and aggravate underlying conditions. Additionally, studies have shown a symbiotic connection between periodontitis and general health, identifying patients with general pathologies as having serious instances of periodontal disease that are quickly progressing and resistant to therapy.

The goal of the non-surgical periodontal therapy is to improve the periodontal state by reducing the deciding factor, the microbial biofilm, and by removing the exacerbating local and general factors. The subgingival calculus and biofilm, as well as the microbial endotoxin-penetrated cementum, are all removed through the hand treatment of the periodontal pockets through scaling and tooth planning. Due to the uneven radicular surfaces and the small furcation areas, which are unavailable to periodontal tools, deep periodontal pockets cannot be effectively debrided with manual equipment. The use of local antibacterial and anti-inflammatory compounds has been suggested due to the infectious nature of periodontitis and the constraints of non-surgical periodontal therapy. However, the use of local antibiotics and antiseptics is restricted due to the present lack of acceptable long-term therapeutic results, as well as the challenging application and inadequate upkeep [1-4].

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## CONCLUSION

Clinical metrics and a rise in plasma levels of IL-1 and TNF-1, which are considered to be biomarkers of periodontal disease, as well as salivary MMP-8 levels, showed that periodontal disease was effectively caused in rats using the ligature method on the lower incisors. The observed drop in plasma IL-1 and TNF concentrations as well as salivary MMP-8 levels show that the new biomaterial has a local and systemic immunomodulatory impact. The amounts of the biomarkers changed depending on the treatment strategy following periodontal surgery. The use of the new biomaterial made through electrospinning in conjunction with mechanical debridement of the periodontal pockets was more successful in improving the clinical metrics. As a result, the doxycycline-loaded evaluated electro spun biomaterial made of PLA and nano-HAP may be a good option to be used as an adjuvant to non-surgical periodontal treatment.

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## CONFLICT OF INTEREST

None.

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