Novel Approach of Instrumental Therapy with the Periosan Chips Based on Chitosan Membrane and EPX Biomolecule

PhD Mara Gómez Flores, M.Sc. Zureya Fontes García, D.D.S. Carlos Manuel Dorantes Torres
Universidad Autónoma de Baja California, Facultad de Odontología Mexicali, Posgrado de Periodoncia

INTRODUCTION

Periodontitis is the sixth most common disease worldwide and the second most common oral pathology, 90% of the world's population has presented either one of it's manifestations. The treatment of periodontal pockets consists in mechanical debridement, coadjuvants (antibiotics or antiseptics) or combined with local drug delivery. Chitosan is a first class novel antimicrobial non-toxic, biocompatible and biodegradable materia that inhibits the growth of gram-positive, gram-negative and pathogenic fungi virus. The nanoparticles which have a loading with sustained release have the ability to maintain a regulated immune environment which helps in periodontal healing , decreases inflammation and periodontal probing depth.

CHITOSAN BENEFITS

- ✓ Promotes cell adhesion and growth.
- ✓ Reduces the viability of *P. Gingivalis.*
- ✓ Modulates the production of PGE2.
- ✓ Reduces periodontal probing depth.

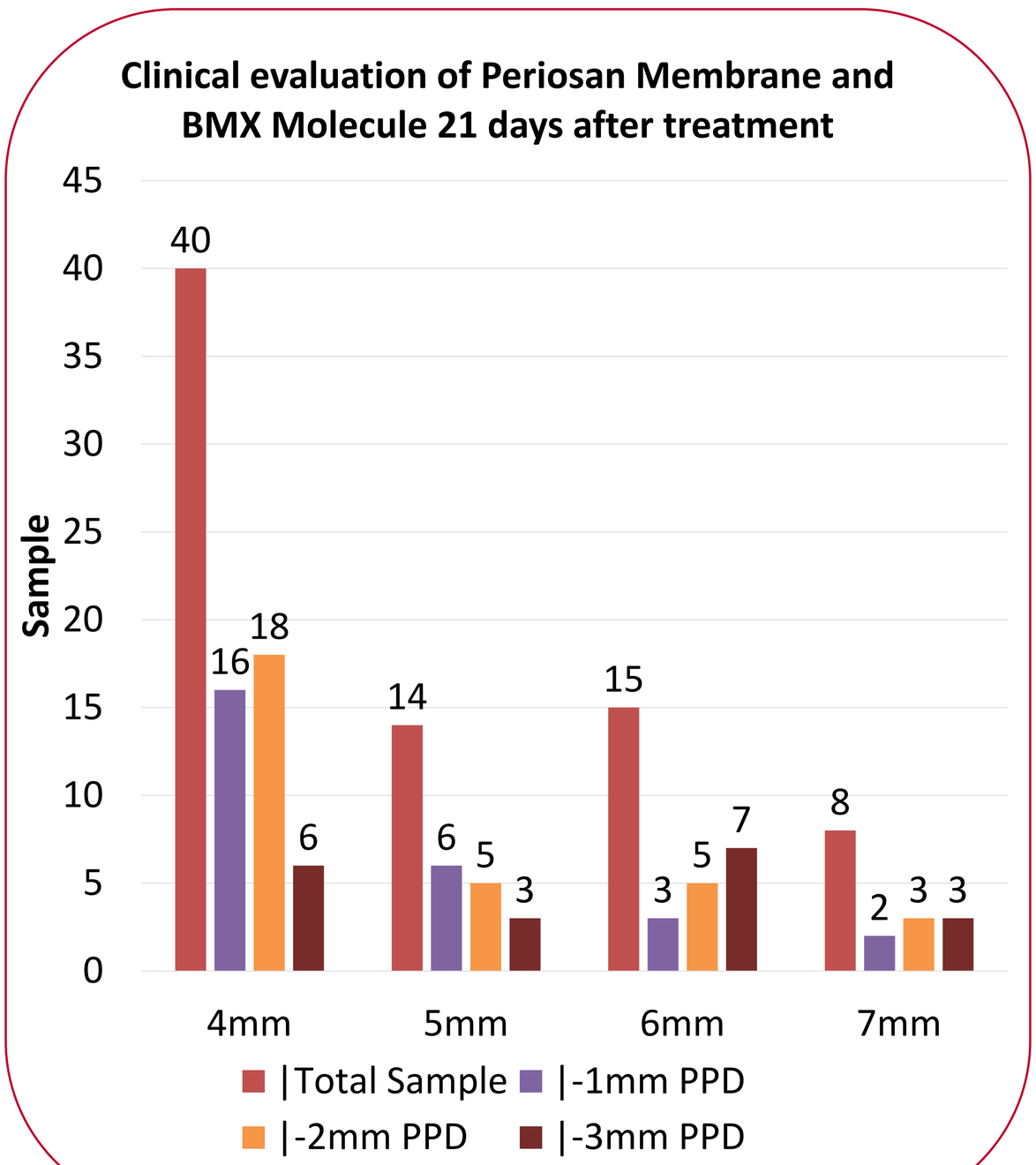
PERIOSAN

PERIOSAN consists of a variety of products with the technology of the **EPX BIOMOLECULE**, which has a regenerator, healing and antiseptic agent due to its active ingredientes supported in Chitosan. It's application allows to lessen the use of analgesics, reducing inflammation and helps regenerating the gingiva and oral tissues.

CLINICAL APPLICATION

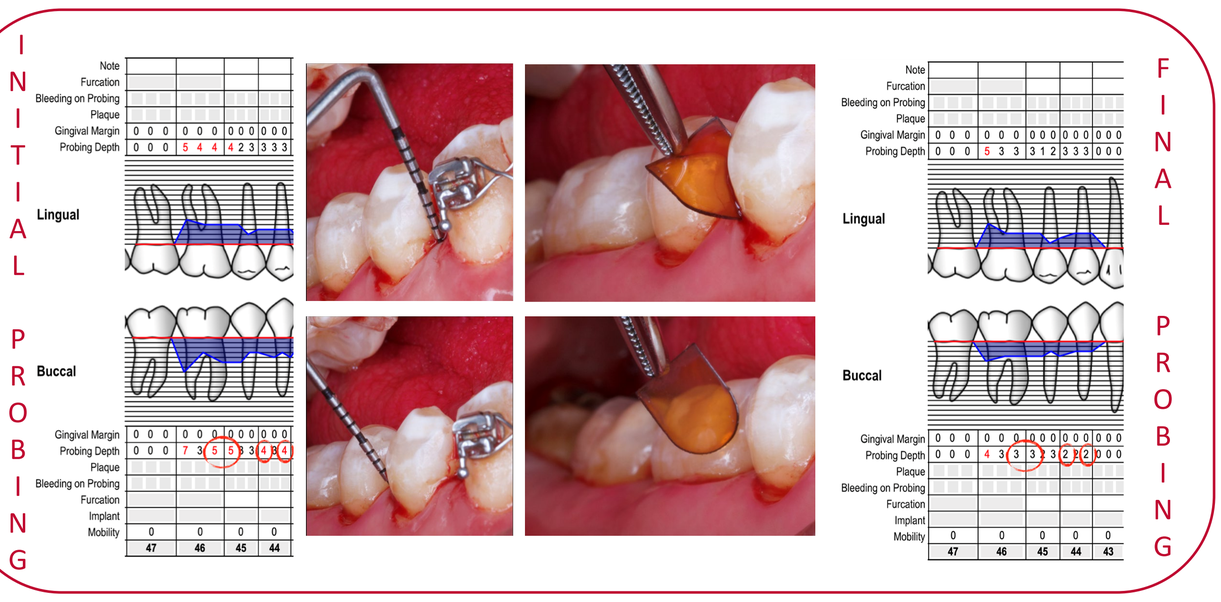
The Periosan Membrane is inserted within the periodontal pocket in it's curved portion. It presents a prolonged action up until 30 days.

RESULTS



CASE #1

CASE #2



REFERENCES

1. Caferreta et al. Multifunctional nanocarriers for the treatment of periodontitis: Immunomodulatory, antimicrobial, and regenerative strategies. Oral Diseases. 2019;25:1866–1878.
2. Mirda E. et al. Synthesis of Chitosan-Silver Nanoparticle Composite Spheres and Their Antimicrobial Activities. Polymers. 2021; 13(3990): 1-1.
3. Tabesh E. at al. Development of an in-situ chitosan-copper nanoparticle coating by electrophoretic deposition. Surface & Coatings Technology. 2019; 364: 39–247.
4. Hajishengallis G. Immunomicrobial pathogenesis of periodontitis: keystones, pathobionts, and host response. Trends in Immunology. 2014; 35(1) 3:11.
5. Suarez D, Mertinez I, Garcia A. Mecanismos inflamatorios en la destrucción periodontal. Revista Odontológica Mexicana. 2019; 23 (3)159-172.
6. Reynolds M. Modifiable risk factors in periodontitis: at the intersection of aging and disease. Periodontology 2000. 2014; 64: 7-19.
7. Corbet EF, Vaughan AJ and Kieser JB: The periodontally-involved root surface. J Clin Periodontol 1993; 20: 402-410.
8. Polak D, Terukazu S, Nishimura F, Shapira L. Diabetes as a risk factor for periodontal disease—plausible mechanisms. Periodontology 2000. 2020;83:46–58.
9. Hienz S, Paliwal S, Ivanovski S. Mechanisms of Bone Resorption in Periodontitis. Journal of Inmunology Research. 2015; 1-10.
10. Figueredo C, Junior-Lira R, Love R. T and B Cells in Periodontal Disease: New Functions in a complex scenario. International Journal of Molecular Sciences. 2019; 1-13.

Presented at the 97th Annual Session of the Greater New York Dental Meeting in 2021