



## Evaluation Of The Impact Of The Orthoboon On The Periodontal Status-An Observational Study

<sup>1</sup>Dr. Karthika Janardhan, <sup>2</sup>Dr. Sanjeev Mishra, <sup>3</sup>Dr. Puneet Padda, <sup>4</sup>Dr. Heena Dixit Tiwari, <sup>5</sup>Dr. Preeti Yadav, <sup>6</sup>Dr. Mohammed Nehal Naimatullah

<sup>1</sup>PhD research Scholar, Dept of Periodontics, Narsinhbhai Patel Dental College and Hospital, Sankalchand Patel University, Visnagar, Gujarat, India

<sup>2</sup>Dental Surgeon, L.N.M.Railway Hospital, Gorakhpur, U.P., India

<sup>3</sup>BDS, Sri Guru Ram Dass Institute of Dental Science and Research, Amritsar, Punjab, India

<sup>4</sup>Consultant, District Medical and Health Office, Visakhapatnam, Andhra Pradesh, India

<sup>5</sup>BDS, Sudha Rustagi College Of Dental Sciences and Research, India

<sup>6</sup>BDS, MDS, Orthodontist, Asian Institute Of Advanced Dentistry Santoshnagar. Hyderabad, Telengana, India

**Corresponding Author:** Dr. Karthika Janardhan,  
[drkarthikaperiodontist@gmail.com](mailto:drkarthikaperiodontist@gmail.com)

---

### ABSTRACT

**Aim:** Present study was conducted to assess orthoboon effects on periodontal status of patients.

**Methodology:** 60 patients who had chronic periodontitis were randomly and equally included in two different groups. Initially all the patients underwent scaling and root planning, CRP levels were noted after the procedure. In one group (n=30) (Group A), the patients were given orthoboon daily for 30 days twice a day with a dosage of 500 mg as compared to Group B, which was the control group. In both the groups, various clinical indexes were recorded which were related to plaque, bleeding as well as gingival status.

**Results:** It was noted that there was a significant decrease of CRP levels in the group A participants after orthoboon was given to the patients as well as mean value of the inflammatory marker after 30 days was also significantly altered denoting less inflammation in test group.

**Conclusion:** A mixture of glucosamine sulfate with collagen and vitamin C known as orthoboon helped in reducing the propensity of periodontitis in test group.

**Keywords:** Orthoboon, chronic periodontitis, inflammation.

---

**DOI:** 10.31838/ecb/2023.12.Si9.274

### INTRODUCTION

One of the most common diseases affecting the periodontium is chronic periodontitis where the alveolar bone as well as the surrounding connective tissue loss.<sup>1,2</sup> This disease is prevalent mostly after 40 years of age, where bacterial plaque causes the initiation of inflammation of supporting tissues. Over the years, this continued inflammation causes teeth loss, many other serious diseases like squamous cell carcinoma etc.<sup>3-5</sup> For treating chronic periodontitis, there are three stages of treatment, first dealing with the infectious agent, second dealing with loss of connective tissue and alveolar bone around a tooth so that it can be regenerated, and third, is to maintain the stability in periodontal health.<sup>6,7</sup> Mostly treatments which are related to debridement have been the therapy of choice in the present times, with most of the clinicians opting for scaling and root planning for maintenance. However, other therapeutic measures like guided tissue regeneration with membranes made up of polytetrafluoroethylene, flap surgeries with antibiotic covers, lasers etc. have also been useful in cases where the phase-1 treatment is not successful and it helps in regeneration of

lost tissue.<sup>8</sup> These treatment strategies work on decreasing the periodontal pocket depths as well as attachment loss which is seen clinically which in turn reduced the mobility of teeth by strengthening the periodontal fiber connections.

It is imperative that patients who had moderate to severe periodontitis, to stop the advancement of disease which can lead to loss of teeth due to decreased periodontal support. Hence the objective of treatment remains to regenerate lost periodontal tissue as much as possible and halt the disease progression. Many factors affect the periodontal loss of attachment- age, hormonal influences, medications, many systemic diseases etc. but many more are still unknown. To help revert the progression of disease, many agents which affect host modulatory responses locally like Bone morphogenic proteins, many growth factors etc are being studied which apart from surgical management can be used as an additional support. Out of these agents, glucosamine sulfate (GS) has been proven to be an affective anti-inflammatory compound which also relieves pain and is used for management of various joint arthropathic conditions as well with very less side effects. Orthoboon is a mixture of this GS which has been combined with a propionate amount of collagen as well as vitamin C, that has been used in mainly arthritis cases in case of orthopedic issues.<sup>16</sup> In inflammation, many inflammatory markers like C-reactive protein (CRP) levels increase and that can be used to detect the amount of damage that inflammation causes along with judging of the efficacy of anti-inflammatory drugs. So, to stop the inflammatory damage in case of chronic periodontitis, it is worthwhile to investigate the efficacy of orthoboon as a part of non-surgical periodontal therapy (NSPT).

#### **AIM OF THE PRESENT STUDY**

The study was conducted with the objective of studying the effects of Orthoboon on host modulatory responses in cases of chronic periodontitis

#### **METHODOLOGY**

Clinical study which was placebo-controlled as well as randomized was done by department of periodontics, where a group of 60 patients between the age groups of 40-55 years, who had chronic periodontitis were invited to be a part of this study. After getting institutional ethics approval and informed consent from the participants, this study was done from the period of December 2021 to February 2022. 60 patients were then randomly allocated to two different groups with equal number of participants (n=30), where Group A was the test group and Group B was the control (placebo) group. Both the group participants underwent scaling and root planning as well as CRP levels being measured. The participants of the test group were given orthoboon (500mg) for a month as compared to the control group, who were given placebo. The CRP levels were measured after 30 days in both the groups after the non-surgical treatment. Various indexes were clinically analysed such as related to bleeding (BI), amount of plaque deposition (PI), gingival condition(GI). The data obtained after assessing the mean values were compared between both the groups using t- test.

#### **RESULTS**

It was noted in the research that there was a noteworthy decrease in the level of CRP in case of test group as compared to the control group after non-surgical periodontal treatment. Immediately after phase I therapy, in case of test group, the level of CRP was  $3.47 \pm 2.04$  and in case of placebo group, being  $3.92 \pm 3.48$ , which was not noteworthy statistically. After a period of 30 days, when mean CRP levels were measured, it stood at  $1.23 \pm 0.68$  for test group and  $3.36 \pm 3.31$  in placebo/ control group, which was noteworthy statistically. However, after 30 days there was no significant changes between both the groups in terms of indexes. (Table 1)

**Table 1- Comparison of the clinical variables between Group A and Group B**

Time duration for NSPT	Clinical variables	Mean±Standard Deviation		t	P
		Orthoboon	Control		
Baseline	C-Reactive Protein	3.47±2.04	3.92±3.48	-0.485	0.629
	Plaque Index	1.04±0.35	1.33±0.77	-1.485	0.145
	Gingival Index	0.87±0.26	1.06±0.64	-1.179	0.244
	Bleeding Index	0.87±0.46	1.11±0.73	-1.246	0.219
30 days	C-Reactive Protein	1.52±0.73	3.37±3.31	-2.428	0.019
	Plaque Index	0.64±0.24	0.56±0.27	1.004	0.320
	Gingival Index	0.54±0.27	0.46±0.25	0.917	0.364
	Bleeding Index	0.46±0.16	0.57±0.35	-1.220	0.229

\*  $P < 0.05$  is statistically significant.

## DISCUSSION

It has been witnessed in many studies that chronic periodontitis is associated with certain set of aggravating factors which rises as the age of a person increases. During 4<sup>th</sup> decade, gingival recession is prominent followed by periodontal pockets and then loss of periodontal attachment between 5<sup>th</sup> and 6<sup>th</sup> decades of life.<sup>9</sup> In the oral microbiome, Gram negative bacteria causes a bio-film formation around a tooth which later causes a plaque formation with a high amount of bacterial population leading to chronic periodontitis resulting in loss of alveolar bone and periodontal tissue recession as well as destruction.<sup>9</sup> The inflammatory response which is then activated against these bacteria's residing in the plaque can further damage the periodontium by release of excess inflammatory mediators.<sup>8</sup> To increase and balance the innate immunity, daily intake of various vitamins and mineral elements are needed so that the therapy can progress with the healing appropriately. Orthoboon, which can Vitamin C component is an anti-inflammatory compound which can help in restoration of damaged tissues. Another component, Glucosamine is important as another prominent compound with anti-inflammatory properties as it helps in synthesis of proteins as well as lipids. Glucosamine helps in treatment of osteoarthritis and can be used in chronic periodontitis as well. Antibiotics like doxycycline has been used for modulating host responses for treatment of periodontal conditions along with other locally administered compounds like Emdogain.<sup>10</sup> However, to study the effectiveness of orthoboon for the treatment of periodontal regeneration, it is imperative to conduct many long-term trials as well in various target populations.

## CONCLUSION

In our study we concluded that orthoboon has been proven to be a noteworthy compound for periodontal inflammation control and can help in periodontal regeneration as well.

## REFERENCES

1. Shaddox LM, Walker CB. Treating chronic periodontitis: Current status, challenges, and future directions. Clin Cosmet Investig Dent 2010;2:79-91.
2. Page RC, Eke PI. Case definitions for use in population-based surveillance of periodontitis. J Periodontol 2007;78:1387-99.
3. Burt B, Research, Science and Therapy Committee of the American Academy of Periodontology. Position paper: Epidemiology of periodontal diseases. J Periodontol 2005;76:1406-19.
4. Tezal M, Sullivan MA, Hyland A, Marshall JR, Stoler D, Reid ME, *et al.* Chronic periodontitis and the incidence of head and neck squamous cell carcinoma. Cancer Epidemiol Biomarkers Prev 2009;18:2406-12.

5. Stambaugh RV, Dragoo M, Smith DM, Carasali L. The limits of subgingival scaling. *Int J Periodontics Restorative Dent* 1981;1:30-41.
6. Caffesse RG, Sweeney PL, Smith BA. Scaling and root planning with and without periodontal flap surgery. *J Clin Periodontol* 1986;13:205-10.
7. Cugini MA, Haffajee AD, Smith C, Kent RL Jr, Socransky SS. The effect of scaling and root planing on the clinical and microbiological parameters of periodontal diseases: 12-month results. *J Clin Periodontol* 2000;27:30-6.
8. Eberhard J, Jepsen S, Jervøe-Storm PM, Needleman I, Worthington HV. Full-mouth disinfection for the treatment of adult chronic periodontitis. *Cochrane Database Syst Rev* 2008:CD004622.
9. Moore WE, Holdeman LV, Cato EP, Smibert RM, Burmeister JA, Ranney RR. Bacteriology of moderate (chronic) periodontitis in mature adult humans. *Infect Immun* 1983;42:510-5.
10. Harshitha B, Subhada B, Mustafa M, Solanki H, Safiya NAM, Tiwari RVC. DNA Laddering to Evaluate Cytogenetic Damage in Patients with Periodontitis. *J Int Soc Prev Community Dent*. 2019 Sep-Oct;9(5):486-491.