

## Role of Plantago Tooth Paste in Patients with Gingivitis: A Clinical Study

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**ABSTRACT**

**Background:** Gingivitis is an irreversible inflammatory reaction in gingival tissue. The present study was conducted to assess the role of Plantago in gingivitis.

**Materials & Methods:** The present study was conducted on 40 subjects of both genders (males- 20, females- 20) with features of gingivitis. Patients were divided into 2 groups. Group I was control group which was prescribed normally available tooth paste while group II was put on Plantago tooth paste for 6 months. All patients were assessed for gingival index and bleeding on probing index at baseline, after 3 months and 6 months.

**Results:** The mean± SD gingival index at baseline was 2 in group I and II, 1.6 and 1.8 in group I and II respectively at 3 months and 1.2 and 1.6 in group I and group II at 6 months. The mean± SD BOP at baseline was 1.9 in group I and II, 1.2 and 1.6 in group I and II respectively at 3 months and 1 and 1.2 in group I and group II at 6 months.

**Conclusion:** Plantago tooth paste proved to be efficient in controlling gingivitis and bleeding on probing. Large scale studies should be done to obtain better results.

**KEYWORDS:** Gingivitis, Plantago, Tooth Paste.

### INTRODUCTION

The gingiva sulcus is the shallow crevice or space around the tooth bounded by the surface of the tooth on one side and the epithelium lining the free margin of the gingiva on the other side. Diseases of gingiva and periodontium are harmful for teeth. Gingivitis is an irreversible inflammatory reaction in gingival tissue.<sup>1</sup> It's one of the most common type of known human diseases in the oral cavity, and epidemiologic studies indicated that more than 82% of U.S. adolescents have obvious gingivitis and symptoms of gingival bleeding, a similar or higher prevalence of gingivitis is reported for children and adolescents in other parts of the world, and other populations have shown even higher levels of gingival inflammation.<sup>2</sup>

The most common features of gingivitis is bleeding from gums and swollen gums. There can be bad breadth from the mouth. There are various medications for the management of gingivitis. Recently herbal medications have gained importance due to its high success rates.

Plantago is the most commonly used medicine in Europe, Japan and North America. In India, it is found in temperate and alpine Himalayas, Assam, Konkan, Western Ghats and Nilgiris. In Hindi, it is known as Luhuriya. It is widely used due to their natural origin and lesser side effects. It is a perennial herb with an erect stout rootstock.<sup>3</sup>

The present study was conducted to assess the role of Plantago in gingivitis.

### MATERIALS & METHODS

The present study was conducted in the department of Practice of Medicine. It comprised of 40 subjects of both genders (males- 20, females- 20) with features of gingivitis. All were informed regarding the study and written consent was obtained. Ethical clearance was taken prior to the study. Patients with history of smoking, alcoholism and pregnant women were excluded.

General information such as name, age, gender etc. was recorded. Patients were divided into 2 groups of 20 each. Group I was control group which was prescribed normally available tooth paste while group II was put on Plantago tooth paste for 6 months. All the patients were instructed to use the oral hygiene items. They were asked to brush their teeth twice daily using the bass technique for approximately 1–3 min. All patients were assessed for gingival index and bleeding on probing index at baseline, after 3 months and 6 months.

Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

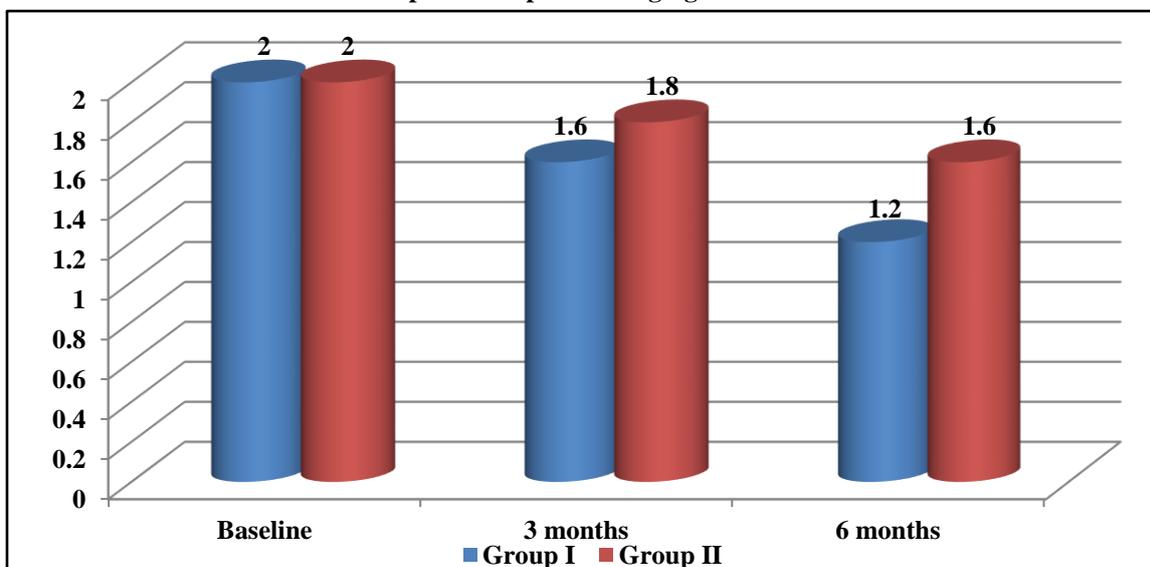
**RESULTS**

Table I shows that group I was control group which was prescribed commercial available tooth paste while group II was put on Plantago tooth paste. Each group had 10 males and 10 females. Graph I shows that mean± SD gingival index at baseline was 2 in group I and II, 1.6 and 1.8 in group I and II respectively at 3 months and 1.2 and 1.6 in group I and group II at 6 months. The difference was significant (P< 0.05). Graph II shows that mean± SD BOP at baseline was 1.9 in group I and II, 1.2 and 1.6 in group I and II respectively at 3 months and 1 and 1.2 in group I and group II at 6 months. The difference was significant (P< 0.05).

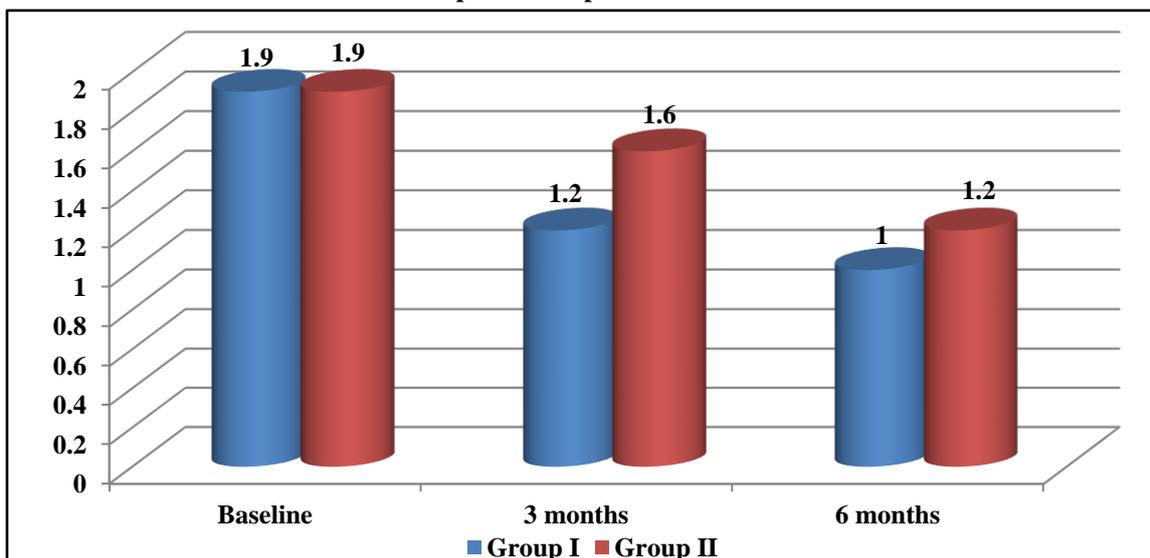
**Table I: Distribution of patients**

Total- 40			
Group I (Commercial tooth paste)		Group II (Plantago tooth paste)	
Males	Females	Males	Females
10	10	10	10

**Graph I: Comparison of gingival index**



**Graph II: Comparison of BOP**



## DISCUSSION

There are several systemic and local factors, that influencing health of periodontium, such as systemic disorders and dental plaque. Inadequate control of plaque leads to gingivitis within 1-2 weeks, which is reversible by regular mechanical and chemical plaque control methods such as tooth brushing and mouthwashes.<sup>4</sup> Microbial plaque has a key role in pathogenesis of periodontal diseases, and periodontal diseases are mainly plaque induced bacterial infections. Plaque control and removal of bacterial biofilm are essential component in the prevention and treatment of gingivitis and periodontal diseases.<sup>5</sup> The present study was conducted to assess the role of Plantago in gingivitis. We included 40 patients diagnosed with gingivitis. Patients were divided into 2 groups. Group I was control group which was prescribed commercial available tooth paste while group II was put on Plantago tooth paste. Each group had 10 males and 10 females.

Grigorescu et al<sup>6</sup> in their study assessed the variation of parameters of bleeding and plaque index (PI) in Gingivitis before, during and after intervention with Plantago. 30 gingivitis patients were divided into two groups: control and test groups. Subjects were instructed to use toothpaste twice daily using the bass method up to 6 months. Clinical data were assessed at baseline, 3 months and 6 months which include an analysis of PI, Gingival Index (GI) and bleeding on probing (BOP). It was observed that over a period of 6 months, there was a significant reduction in all the clinical parameters which includes GI, PI and BOP in test group i.e., Plantago showed significant effect compared to the control group. There is a significant mean reduction in PI, GI and BOP in gingivitis before, during and after homoeopathic treatment with Plantago.

We found that mean $\pm$  SD gingival index at baseline was 2 in group I and II, 1.6 and 1.8 in group I and II respectively at 3 months and 1.2 and 1.6 in group I and group II at 6 months. The mean $\pm$  SD BOP at baseline was 1.9 in group I and II, 1.2 and 1.6 in group I and II respectively at 3 months and 1 and 1.2 in group I and group II at 6 months. It was similar to Sharma et al.<sup>7</sup> Pathologic changes in gingivitis are associated with the presence of oral microorganisms attached to the tooth and perhaps in or near the gingival sulcus. These organisms are capable of synthesising products that cause damage to epithelial and connective tissue cells as well as to intercellular constituents such as collagen, ground substance and glyocalyx.<sup>8</sup>

In a previous study, Plantago was able to promote a significant reduction in PI and GI when compared to a standard dentifrice containing only fluoride. Reddy ES et al assessed the variation of parameters of bleeding and plaque index (PI) in Gingivitis before, during and after intervention with Plantago. Thirty gingivitis patients were divided into two groups: control and test groups.

Subjects were instructed to use toothpaste twice daily using the bass method up to 6 months. Clinical data were assessed at baseline, 3 months and 6 months which include an analysis of PI, Gingival Index (GI) and bleeding on probing (BOP). Over a period of 6 months, there was a significant reduction in all the clinical parameters which includes GI, PI and BOP in test group with t-test. i.e., Plantago showed significant effect compared to the control group. Repeated-measures ANOVA also showed a significant difference. There is a significant mean reduction in PI, GI and BOP in gingivitis before, during and after homoeopathic treatment with Plantago.<sup>9</sup>

Geidel A et al compared the efficacy of herbal toothpaste with two other chemically active toothpastes regarding plaque and gingivitis control. Seventy-six (27 females and 49 males, mean age 47.8 years, range 40-58 years) of 84 initial participants with slight and moderate chronic periodontitis used standardized manual toothbrushes and their usual technique for daily manual mechanical plaque control for 24 weeks of supportive periodontal therapy. The volunteers were randomly assigned to one of 3 groups: group 1 used the herbal toothpaste, group 2 a triclosan/copolymer toothpaste, and group 3 an amine/stannous fluoride toothpaste. OHI, API, SBI, BOP, PD and AL were recorded at baseline and after 6, 12 and 24 weeks (PD and AL only at baseline). Moderate changes occurred in API and OHI in all groups. The herbal toothpaste resulted in significantly lower API and OHI in comparison to the fluoride toothpaste during the study period ( $p = 0.001$  and  $0.049$ , minimum and maximum of cases, respectively). SBI was significantly improved in all groups starting after 12 weeks ( $p = 0.001$  and  $0.033$ ). BOP remained largely unchanged in all groups and was always significant lower in the herbal toothpaste group ( $p = 0.001$  and  $0.036$ ). During the study period of 24 weeks, the herbal toothpaste was as good as the control toothpastes.<sup>10</sup>

## LIMITATIONS

The limitation of the present study is small sample size. The selection of tooth was also limited. Involving multiple tooth paste could have been proven useful in comparing the results.

## CONCLUSION

Plantago tooth paste proved to be efficient in controlling gingivitis and bleeding on probing. Large scale studies should be done to obtain better results.

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