



TO STUDY THE EFFECT OF BEE PROPOLIS ON GINGIVITIS AND PLAQUE CONTROL



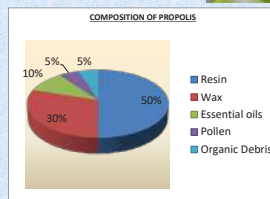
INTRODUCTION :- Propolis or 'bee glue' is the generic name for the resinous substance collected by honeybees from various plant sources. The word propolis is derived from the Greek pro-, for or in defense, and polis-, the city, that is, defense of the city (or the hive). Propolis is a strongly adhesive, resinous substance collected, transformed and used by bees to seal holes in their honeycombs, smooth out the internal walls and protect the entrance against intruders.

AIMS AND OBJECTIVES :-

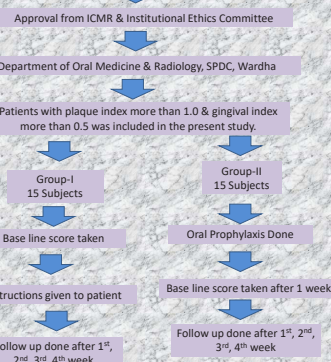
- To study effect of bee propolis in plaque control & gingivitis by using ethanolic extract of bee propolis in Gel form . To compare pretreatment plaque & gingival index at the base-line with at the end of two weeks, three weeks & fourth weeks in patients without oral prophylaxis (**Group-I**).
- To compare pretreatment plaque & gingival index at the base-line with at the end of two weeks, three weeks & fourth weeks in patients with oral prophylaxis (**Group-II**). To correlate pretreatment & post-treatment plaque & gingival index in group I & group II .

MATERIALS AND METHOD:-

3000 Grams raw propolis was obtained from Central Bee Research & Training Institute, Pune & 3.5% ethanolic extract was prepared in gel form. For dispensing 30 gram light protective plastic container was used. Before, dispensing the drug all information regarding the source of drug & its action was provided to the patients then after obtaining write consent patient was included in study group.



METHOD



Plaque Index



Pre - Operative



Post - Operative

Gingival Index

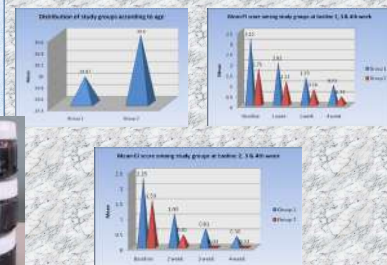


Pre - Operative



Post - Operative

RESULT



When Plaque index score was assessed among the Groups at baseline, at 2nd week, 3rd week & at 4th week, the highly significant difference was found among the groups ($p < 0.00$). Gingival index score among the groups was highly significant at baseline, 2nd week and 3rd week ($p < 0.00$), whereas GI value among the groups at 4th week was significantly different ($p < 0.01$). Intra-group comparison for Plaque and Gingival index score at baseline and at different interval was carried out among the groups and the difference was found to be highly statistically significant.



DISCUSSION:-

"Apitherapy" is a distinguished method of treatment based on the use of products which are collected, processed or produced by bees. Such products include the following: pollen – as a product collected by bees, propolis, nectar honey, and bee bread – products collected and processed by bees, royal jelly, bee venom and beeswax – products secreted by bees. The therapeutic properties of propolis have been used in dentistry for many years, focusing on the four most well-known properties of that substance: regenerative, anti-bacterial, anesthetic and stimulation of the immune system. The therapeutic properties of propolis can be confirmed with its effectiveness in periodontal diseases, as it mitigates the course of alveolar osteitis. Its anesthetic properties are used in dentin hypersensitivity, electro-coagulation of hypertrophic inter-dental papillae and minor surgical procedures. There are also reports on research tests with the use of propolis in the treatment of pulp and caries. Propolis is also used in the form of gel and rubbing ointments, a 10-percent ethanol solution for brushing and a 0.2-percent ethanol-water solution for mouth-washing used three times a day in the treatment of periodontal diseases, ulcerative gingivitis, chronic and recurrent aphthous ulcers, desquamative cheilitis and bullous and ulcerative forms of lichen planus. Propolis, to produce the anti-inflammatory effect, acts in the modulation of cytokines and inflammatory enzymes, such as the suppression of the production of prostaglandins, leukotrienes, histamine, and TGF- β 1. There are some studies *in vitro* and *in vivo* where propolis, in several formulations, has demonstrated activity against periodontal pathogens. Synergistic effects of different compounds seem to be the most important process to explain the antibacterial activity of propolis, since it is well established that a single propolis component does not have an activity greater than the other components of propolis isolated. Reducing the number of microorganisms in dental plaque results in the reduction of products released by them, which act as trigger of gingival inflammation. In the present study, 3.5% ethanolic extract of Indian propolis were effective in controlling the plaque & gingivitis. It produced significant reductions in supra-gingival plaque and gingivitis, in both groups when compared to baseline scores index with second, third and fourth week. These findings are probably justified by the antibacterial and anti-inflammatory effects of propolis.

CONCLUSION:-

Current opinion is that the use of standardized preparations of propolis is safe and less toxic than many other synthetic medicines. Since the anaerobic microflora associated with aggressive periodontitis may be resistant to several antibiotics, the reported antimicrobial activity is of relevance. The results of this study indicate the antimicrobial activity of ethanolic extract of Indian propolis. The present study showed evidence of the efficacy of 3.5% ethanolic extract of Indian propolis for the control of plaque and gingivitis, suggesting that it can be used as a therapeutic and preventive use for the control of periodontal diseases.

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OBJECTIVE: This study was conducted to evaluate effect of bee propolis in plaque control and gingivitis by using ethanolic extract of bee Propolis Gel.

MATERIALS-METHODS: A total of 30 patients were included in the present study. Patients with plaque index more than 1.0 and gingival index more than 0.5 were included in the present study. These patients were divided into 2 groups. Group I: (15 Patients) placed on local application of propolis gel without scaling and polishing. Group Group II: (15 Patients) placed on local application of propolis gel after scaling and polishing. The PI and GI index score was recorded in both groups from baseline up to four weeks at the interval of one week. The data was analyzed using Statistical Package for Social Science (SPSS) version 11.5 (SPSS Inc., Chicago, Ill.). The p value was taken as significant when less than 0.05. Mann– Whitney U-test will be used to assess the statistical significance difference for Group I and Group II. While Changes in PI and GI score at different interval over time was assessed by using Wilcoxon's sign-ranked test.

RESULTS: When the PI index score was assessed among the Groups at baseline, at 2 nd week, 3rd week & and 4th week, a highly significant difference was found among the groups ($p < 0.00$). GI index score among the groups was highly significant at baseline, 2nd week, and 3rd week ($p < 0.00$), whereas GI value among the groups in 4th week was significantly different ($p < 0.01$). Intra-group comparison for PI and GI index scores at baseline and at a different interval was carried out among the groups, and the difference was found to be highly statistically significant.

CONCLUSION: The present study showed evidence of the efficacy of alcohol-free ethanol extract containing 3.5% Indian propolis for the control of plaque and gingivitis, suggesting that it can be used as a therapeutic and preventive use for the control of periodontal diseases. However, it is necessary to perform a clinical trial, double-blind, randomized control trial to prove the efficacy of an alcohol-free 3.5% ethanol extract of propolis gel.