

**TO ASSESS THE EFFICACY OF GREEN TEA CATECHIN AS A
LOCAL DRUG DELIVERY SYSTEM IN PERIODONTAL
DISEASES – A CLINICO-MICROBIOLOGICAL STUDY**



By

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ABSTRACT

Background and Objectives: The importance of specific subgingival bacteria in the etiology of periodontal disease has been clearly established and as a result therapy is necessarily directed at controlling the bacterial flora associated with the periodontium and the tooth interface. The present study was carried out to assess the adjunctive efficacy of green tea catechin as a local drug delivery system in improving periodontitis.

Materials and method: Green tea catechin strips were prepared with suitable delivery vehicles, and the in vitro release pattern estimated using UV (Ultra Violet) spectrophotometry. In vivo aspect of the study included 30 sites with probing pocket depth (PPD) of ≥ 7 mm, the sites were divided into 2 groups: (i) Control group- patients receiving scaling and root planning alone (n=15). (ii) Test group – patients receiving scaling and root planning with application of green tea catechin strips (n=15). Clinical recordings included the plaque index (PI), gingival index (GI), probing pocket depth (PPD) and relative attachment level (RAL), which was measured using UNC-15 probe. In addition subgingival plaque samples were obtained to assess total bacterial counts and cocci and bacilli scores. Both clinical and microbiological parameters were evaluated at baseline, 1 month, 3 months and 6 months.

Results: In vitro release pattern showed that 99.63 % of the catechin was released from the green tea catechin strips respectively at the end of 9 days. Plaque index and gingival index scores showed significant improvement from baseline till the end of 6 months. The mean PPD and RAL scores between the 2 groups at baseline, 1 month, 3 months and 6 months showed a significant reduction. The microbiological parameters i.e. total bacterial counts and cocci

and bacilli scores showed a reduction, with significantly better reduction observed in groups treated with green tea catechin strips. Overall the groups receiving adjunctive green tea catechin strips showed significantly better results than the control group.

Conclusion: The use of agents which has a local anti-inflammatory and anti-oxidant activity such as green tea catechin can be used as an effective adjunct to routine SRP in patients suffering from periodontitis.

Key Words: Green tea catechin, local drug delivery, periodontal disease, UV spectrophotometry, scaling and root planing.