

## **ABSTRACT**

### **Background:**

Periodontitis is an inflammatory disease of bacterial origin that results in the progressive destruction of the tissues that support the teeth. The gram-negative asaccharolytic bacterium *Porphyromonas gingivalis*, contributes to disease by paving way to a dysbiotic state. Real time polymerase chain reaction is a rapid and sensitive method for the quantitative detection of bacterial gene expression. Supra and subgingival debridement results in the mechanical disruption of the plaque biofilm and remains the “gold standard” modality used for periodontal treatment. The conventional non-surgical therapy is performed on a quadrant basis with weekly intervals. This time interval may result in re-colonisation by the bacteria of the instrumented pockets and impair healing. A relatively new treatment modality, full-mouth debridement, has a significant impact on periodontal practice, needs to be a proven benefit for patients.

### **Aim:**

The aim of this study is to evaluate the clinical and microbiological outcomes of one-stage full-mouth debridement in the treatment of chronic periodontitis.

### **Materials and methods:**

In this study 20 subjects have undergone full mouth scaling and root planing within 24 hours without adjuvant use of chlorhexidine. The clinical parameters plaque index, sulcus bleeding index, probing pocket depth and clinical attachment level were monitored at baseline; six weeks, three months and six months post treatment. Furthermore microbial analysis of the subgingival plaque sample was done by real time polymerase chain reaction at baseline; six weeks and six months post treatment.

### **Results:**

One stage full mouth debridement treatment provided continuous clinical improvement during the experimental period, which reached peak levels at six months. The plaque scores significantly reduced from  $2.49 \pm 0.56$  to  $0.97 \pm 0.21$  ( $p < 0.001$ ). The bleeding indices significantly improved from  $3.37 \pm 0.72$  to  $1.69 \pm 0.48$  ( $p < 0.001$ ). There was a mean reduction of probing pocket depth of 1.8 mm and gain of clinical attachment level of 0.7 mm, ( $p < 0.001$ ) which was statistically significant. At six weeks and six months post treatment, the expression of the *Porphyromonas gingivalis* did not upregulate significantly from baseline ( $p > 0.05$ ).

### **Conclusion:**

Within the limits of present study, it can be concluded that full mouth debridement without adjuvant use of chlorhexidine was effective in improving the clinical as well as microbiological parameters in the treatment of chronic periodontitis. However, in future, long term clinical studies monitoring clinical, microbiological and immunological changes in large number of samples will be needed.

**Key words:** Full mouth debridement, PCR, non-surgical therapy and chronic periodontitis