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## RESEARCH ARTICLE

### SURGICAL Vs NONSURGICAL APPROACH IN THE MANAGEMENT OF LOCALIZED AGGRESSIVE PERIODONTITIS A CLINICAL STUDY

<sup>1</sup>Dr. Saranyan, R., <sup>2</sup>Dr. Balaji Babu, G., <sup>1</sup>Dr. Sayee Ganesh, N., <sup>1</sup>Dr. Jayachandran, D.,  
<sup>1</sup>Dr. Rasila Sainu and <sup>1</sup>Dr. Surya Rajan Kurian

<sup>1</sup>Department of Periodontia, Vinayaka Mission's Sankarachariyar Dental College, Salem, Tamilnadu, India

<sup>2</sup>Department of Periodontia, CSI Dental College, Madurai, Tamilnadu, India

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#### ABSTRACT

**Background** Localized aggressive periodontitis (LAP) is a disease of the periodontium that is characterized by rapid loss of bone, absence of gingival inflammation and minimal amount of plaque and calculus. This study was conducted to evaluate the efficacy of surgical and nonsurgical approach along with systemic tetracycline in the management of LAP.

**Method:** A clinical study was done on 24 male and 16 female patients and their probing pocket depth and clinical attachment level were assessed at baseline and after periodontal surgery. **RESULT.** Pre and post operative mean reduction of pocket depth and gain of attachment level was significant at 1%.

**Conclusion:** A reduction of pocket depth and gain of attachment was observed postoperatively.

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## INTRODUCTION

Baer defined aggressive periodontitis as a disease of the periodontium occurring in an otherwise healthy adolescent which is characterized by a rapid loss of alveolar bone about more than one tooth of the permanent dentition (Baer *et al.*, 1971). It is a distinctive periodontal disease as it has a familial background and there is a lack of relationship between local etiologic factors and presence of deep periodontal pockets. It has a distinctive radiographic pattern of alveolar bone loss and has a faster rate of progression (Baer *et al.*, 1971). Immune defects such as defective polymorphonuclear leukocytes and/or monocytes have also been implicated in the pathogenesis of the disease (Cianciao *et al.*, 1977; Clark *et al.*, 1977). Though the exact etiology of the disease is not known it is considered to have a strong microbial interaction with *Aggregatibacter actinomycetemcomitans* (Aa) (Birkedel *et al.*, 1982). This organism has the capacity to penetrate into the epithelial tissues causing rapid periodontal destruction. Considering the complexity of the disease various treatment modalities have been suggested. Many studies have been done to find the effective method of managing the disease.

**\*Corresponding author: Dr. Saranyan, R.,**  
Department of Periodontia, Vinayaka Mission's Sankarachariyar  
Dental College, Salem, Tamilnadu, India.

## MATERIALS AND METHODS

This study was conducted at the division of Periodontia Rajah Muthiah Dental College and Hospital, Chidambaram, Annamalai University Tamilnadu India. Both sexes were included for the study. 16 females and 24 males who attended the dental op and diagnosed as aggressive periodontitis were selected for the study.

### Inclusion Criteria

Patients chosen were free from any systemic disease, have not undergone oral prophylaxis or any other periodontal treatment and not taken antibiotics 6 months prior to the study.

### Exclusion Criteria

Pregnant and lactating women, smokers, patients with immunomodulatory therapy, systemic diseases were excluded from the study.

### Grouping

Patients were divided into 2 groups randomly each group comprising of 20 patients. Group 1 patients were treated with

periodontal flap and systemic tetracycline. Group 2 patients were treated with scaling and root planning and systemic tetracycline. The treatment was for a period of 3 months.

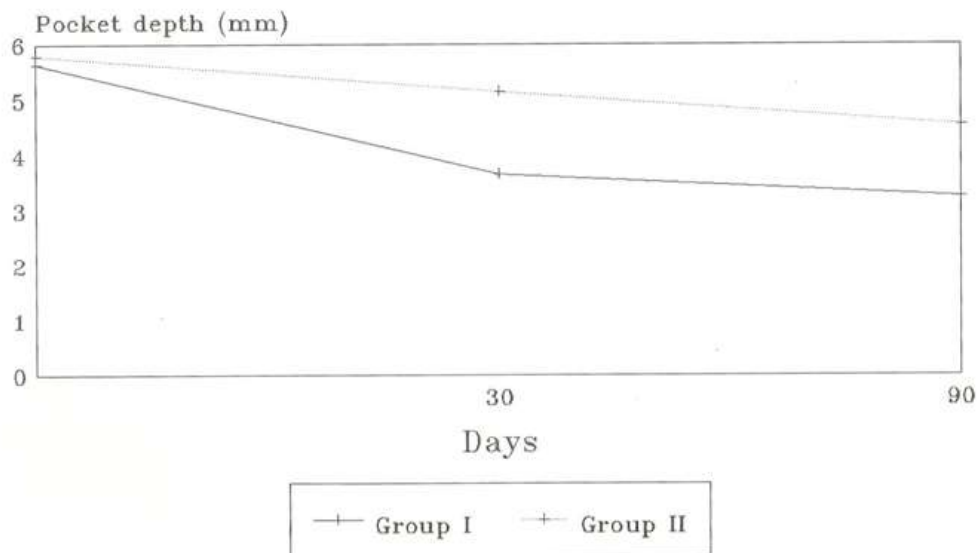
### Experimental Parameters

The clinical parameters that were employed for the study were probing pocket depth and clinical attachment level. The scores were recorded at baseline, 30 days and at 90 days.

## RESULTS

**Table 1. Pre and postoperative measurements of probing pocket depth**

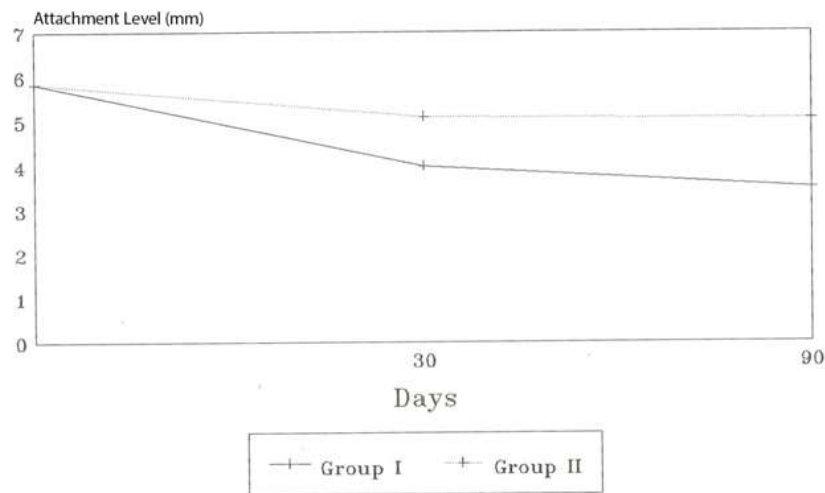
	Group I		Group II		(one way analysis) F value	Significance
	Mean	Standard deviation	Mean	Standard deviation		
0 Day	5.65	0.59	5.80	0.62	0.62	NS
30 Days	3.65	0.59	5.15	0.67	56.6	P< 0.01
90 Days	3.25	0.64	4.55	0.51	50.6	P< 0.01
(Friedman Test) Chi square value	54.30 P< 0.01		35.65 P< 0.01			



**Bar Graph -1**

**Table 2. Pre and post measurements of clinical attachment level**

	Group I		Group II		(one way analysis) F value	Significance
	Mean	Standard deviation	Mean	Standard deviation		
0 Day	5.85	0.67	5.85	0.67	-	NS
30 Days	4.00	0.56	5.10	0.55	38.96	P< 0.01
90 Days	3.50	0.76	5.05	0.60	50.90	P< 0.01
(Friedman Test) Chi square value	51.14 P< 0.01		28.89 P< 0.01			



Bar Graph-2

## DISCUSSION

The major role in the treatment of periodontal disease is to arrest deterioration of the supporting periodontal tissues and to allow establishment of new periodontal attachment. Since LAP is a multifactorial disease and has a specific bacterial etiology, treatment should be directed not only in reduction of pocket depth and gain of attachment level but also towards the elimination of specific periodontal pathogen Aa. The present study was undertaken to compare the efficacy of systemic tetracycline in conjunction with flap surgery in one group (group1) with the efficacy of systemic tetracycline in conjunction with scaling and root planing in the other group (group2). Various clinical data are available indicating periodontal surgery in combination with systemic tetracycline were effective in the management of the disease. Surgical procedures suppress Aa in clinically treated sites and systemic tetracycline therapy can remove the organism from both the infected sites and buccal mucosa, (Newman *et al.*, 1976).

Lindhe and Lijenberg (1984) found that a treatment programme that included systemic tetracycline administration and surgical removal of granulation tissue. The results showed a resolution of the inflammatory lesion and a gain of clinical attachment. The findings of the present study is in concurrence with the above study. Kornman and Robertson (1985) and Mandell and Socransky (1985) showed a significant reduction in pocket depth and gain in attachment following periodontal surgery with systemic tetracycline. The results of the present study coincides with the above studies as shown in Table 1 and Table 2.

Christersson *et al.* (1985) reported that root instrumentation failed to eliminate the bacteria and reducing the probing pocket depth and also failed to improve the attachment levels. The results of the present study confirmed the findings of the above study. Slots and Rosling (1983) and Wennstrom (1987) showed that scaling and root planing removed most of the attached and unattached bacterial plaque but this mechanical debridement with systemic tetracycline did not completely eradicate the organism although they reported some reduction in pocket

depth and gain of attachment level. The findings of the present study correlates with the above study as shown in table1 and table 2.

## Conclusion

Within the limitations of the present study it can be concluded that periodontal flap surgery along with systemic administration of tetracycline is the most effective method in the management of the disease.

**Conflict of interest:** Nil

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