



A Comparative Clinical Study To Evaluate The Efficacy Of *Priyanguvadi Pratisarana* And *Patadi Pratisarana* In *Sitada* (Gingivitis)

Anagha K .P¹ , Apeksha D Rao ²

1. 3 rd Year P.G Scholar, Dept. of PG Studies in Shalakya Tantra, Alvas Ayurveda Medical College, Moodbidiri, Karnataka.

2 .Professor and HOD, Dept. of PG Studies in Shalakya Tantra, Alvas Ayurveda Medical College, Moodbidiri, Karnataka.

ABSTRACT

Mukha is one of the important parts in *Urdwajatru*. It works as a reflection of health of GI tract as it is the gateway of alimentary canal. Smoking, unhealthy food habits, improper oral hygiene cause adverse effect on health of human body. These are the prime causative factors which leads to *Mukha*, *Danta* and *Dantamoolagata Rogas*.

Sitada is one among the *Dantamoolagata Rogas*. There is a vitiation of *Kapha* and *Rakta* resulting in *Raktasraava* from the gums. Gums becomes *Krishna*, *Mrudu*, *Jeerna* further leads to *Prakledana* and *Durgandhatwa* of oral cavity.

Gingivitis if neglected and left untreated, further progress to its later stage known as periodontitis which involves deeper structures of the periodontium. Modern management is not satisfactory as their treatment of repeated scaling is harmful for teeth and is mildly painful. Mechanical removal of plaque and debris by scaling causes trauma to the gums. The current research was carried out while taking into account effectiveness, cost, convenience in utilization, and routine application.

- 60 patients fulfilling the diagnostic and inclusion criteria irrespective of gender, religion, occupation, marital status, socio economic status, educational status were selected for the study.
- Both the groups individually had a highly significant outcome in all evaluation parameters such as *Akasmath Rakthasrava*, *Shotha*, *Krishnatha*, *Dantamamsa mrudutha*, *Dantamamsa Prakledatha*, *Mukhadaurgandhya*, Gingival index and Plaque index. When the outcomes of the evaluation criteria were compared between the groups, there was significant difference.

- It has been statistically proven that there is statistically significant difference in the effect of *Priyanguvadi Pratisarana* and *Patadi Pratisarana* with *Patadi Pratisarana* having better effect than *Priyanguvadi Pratisarana* in *Sitada*(Gingivitis).

Key words: *Sitada*, Gingivitis, *Priyanguvadi Pratisarana*, *Patadi Pratisarana*.

INTRODUCTION

Mukha is one of the important part in *Urdwajatru*. It works as a reflection of health of GI tract as it is the gateway of alimentary canal. Smoking, unhealthy food habits, improper oral hygiene cause adverse effect on health of human body. These are the prime causative factors which leads to *Mukha*, *Danta* and *Dantamoolagata Rogas*. Earliest reference about *Sitada* is available in *Susrutha Samhitha* (2350 BC). He has mentioned it under *Dantamoolagata Rogas* in *Mukha Prakarana*¹. In this condition there is a vitiation of *Kapha* and *Rakta* resulting in *Raktasraava* from the gums. Gums becomes *Krishna*, *Mrudu*, *Jeerna* further leading to *Prakledana* and *Durgandhatwa* of oral cavity.

Sitada can be correlated to gingivitis because of its similarity with above said symptoms. It is most encountered oral disease in day-to-day practice. The most common cause for gingivitis is plaque (Plaque induced gingivitis) where there is accumulation of bacterial plaque at or near the gingival margin. The bacterial component produce a variety of enzymes and toxins which diffuse through the junctional epithelium and further initiate inflammatory changes in gingival connective tissue. Gingivitis if neglected and left untreated, further progress to its later stage known as periodontitis which involves deeper structures of the periodontium³. It has 80-90% prevalence in India⁴. Currently there are no reliable predictors of which the individual are susceptible to this disease progression can be predicted. So, prevention and control of gingivitis is essential in every case.

Modern management is not satisfactory as their treatment of repeated scaling is harmful for teeth and is mildly painful. Mechanical removal of plaque and debris by scaling causes trauma to the gums. There will be persistent gingival inflammation even after scaling process. Last treatment of choice is Flap surgery⁵ which is quite expensive and uses many chemicals as mouthwashes which are already known to have side effects like drying of mouth, staining, persistent sore and used it continuously.

Pratisarana is aimed at breaking the pathogenesis of disease and to improve the health of gums. The medicinal preparations in Ayurveda uses easily available drugs which are biodegradable, nonsynthetic and is economical as compared to modern dentistry.

Keeping these points in view, the present clinical study was planned with following aims and objectives;

- To evaluate the efficacy of *Priyanguvadi Pratisarana*⁶ in *Sitada*.(Gingivitis)
- To evaluate the efficacy of *Patadi Pratisarana*⁷ in *Sitada*.(Gingivitis)
- To compare and evaluate the efficacy of *Priyanguvadi Pratisarana* and *Patadi Pratisarana* in *Sitada*.(Gingivitis)

MATERIALS AND METHODS

Patient selection

60 patients fulfilling the diagnostic and inclusion criteria irrespective of gender, religion, occupation, marital status, socio economic status, educational status was selected for the study.

Selected patients are randomly divided into two groups- Group A and Group B with 30 patients in each group.

- **Study design:** Randomized Comparative Clinical study.
- **Method of sampling:** Simple Random Sampling Method – Lottery method.

INCLUSION CRITERIA

- Age group of 16-60yrs.
- Subjects who have cardinal complaints and associated symptoms and signs of *Sitada* have randomly selected for study

EXCLUSION CRITERIA

- Gingivitis with hyperplasia or neoplasia.
- Those having gingival lesions caused by systemic diseases, medications, vitamin deficiency, hemorrhagic diseases and immune compromised disorders.
- Pregnancy.
- Smoking and Tobacco chewing.
- Signs and symptoms of periodontitis

INTERVENTION

Table No.1.1 shows the drug, dose ,Kala and duration of both groups.

GROUP	DRUG	DOSE	KALA	TREATMENT DURATION
GROUP A	<i>Priyanguvadi Pratisarana</i>	Q.S	<i>Twice daily After brushing for 5 minutes</i>	<i>1 month</i>
GROUP B	<i>Patadi Pratisarana</i>	<i>Q.S</i>	<i>Twice daily After brushing for 5 minutes</i>	<i>1month</i>

OBSERVATION PERIOD:

In both the groups, clinical findings and symptoms before, during and after the treatment were observed and the same were recorded in the proforma of the case sheet.

Patients were observed before the treatment, on the 15th day of treatment and on the 30th day to assess the progress.

Follow up period: On 60th and 90th day

Total study duration: 3 months

ASSESSMENT CRITERIA

The criteria for assessment of treatment is based on improvement in cardinal symptoms and their percentage of relief. They will be shown by grading methods.

SUBJECTIVE PARAMETER⁸

1. *Akasmata Rakta Srava* (Bleeding of gums)
2. *Shotha* (Inflammation of gums)
3. *Krishnata* (Discoloration of gums)
4. *Dantamamsa Mridutha* (Sponginess of gum)
5. *Dantamamsa Prakledata* (Exudate from gums)
6. *Mukhadaurgandhya* (Halitosis)

OBJECTIVE PARAMETER⁹

1. Gingival index
2. Plaque index

Statistical analysis

Statistical analysis of Group A and Group B was done based on the observation before and after treatment under various clinical parameters. Sigma Stat Version 3.1 Statistical Package was used.

Overall effect of the treatment was statistically analysed using;

- ✓ For ,within the group analysis; Friedman repeated measure analysis of variance on ranks
- ✓ Between the group-Subjective parameter –Mann-Whitney Rank Sum Test; Objective parameter – Unpaired ‘t’ test

OBSERVATION

AGE

Age wise distribution of patients showed that, among the 60 subjects included in the study, 46% are aged between 16-30 years, 32% were aged between 31-45 years and 22% were aged between 46-60 years. As the majority of the subjects were from Alvas college the predominant age group became 16-30 years.

GENDER

Out of the 60 subjects, a maximum number of the subjects were females corresponding to 73% and the rest of them were male, 27%. Support that increase in hormonal variation during menstrual cycle increases blood flow to gum, makes it more susceptible to irritation. Hormonal fluctuations during a female's lifetime may produce an exaggerated inflammatory response to dental plaque, resulting in gingivitis. Dental plaque deposition and high inflammatory gingiva (bleeding and redness) are typical features of hormone-associated gingivitis.

RELIGION

Religion-wise distribution of patients showed that the majority, 93% were of Hindu religion, which may be because of that the subjects were selected from a Hindu-dominant geographical area and 5% were Muslim and 2% were Christians. Majority were of Hindu community, may be due to Hindu community predominance in this geographical area.

DIET

On the basis of the diet it could be noted that majority of the patients i.e., 19 patients (68%) were following mixed diet. This may be due to the fact that the majority of the population in this area is following a mixed diet. Also can be concluded that the habit of consuming *Matsya* and *Mamsa* contribute to the manifestation of the disease as described in the literature review. Food impaction is the forceful wedging of food into the periodontium by occlusal force. It may occur interproximally or in relation to facial or lingual tooth surfaces. Food impaction is a very common cause of gingival and periodontal disease.

SOCIOECONOMIC STATUS

On the basis of their socioeconomic status, it was noted that higher incidence of disease is seen in middle (73%) and lower class (18%), indicates that socioeconomic status has strong relation with oral health. This can be attributed due to the lack of awareness and practice regarding oral hygiene.

PRAKRUTHI

Out of 60 patients, maximum number of patients were of *Kapha-Vata Prakruthi* (50%), 15% were *Kapha-Vata prakruthi*, 27% were *Pitta-kapha Prakruthi* and 8% were *Vata-pitta Prakruthi* and 50% were *Kapha-Pitta Prakruthi*. Majority were of *Kapha-Pitta Pradhana Prakruthi* individuals. Owing to the involvement

of kapha dosha and *Raktha Dhathu* in *Sitada*. *Kapha-Pitta Prakruthi* persons are more prone to this disease due to *Ashraya-Ashrayi bhava*

AGNI

Distribution of subjects based on Agni shows that 22% were Samagni, 43% were Mandagni, 22% were having Vishamagni and 13% were having Teekshnagni. Majority were having Mandagni. This may favour the formation of Ama and initiation of *Samprapthi* of disease. So Mandagni patients are more prone to *Sitada* as per this study.

RASA PREDOMINENCE

Out of 60 patients 57% were having Madhura rasa predominant *Ahara* and 43% were having *Katu rasa* predominant *ahara*. *Madhura Rasa* is responsible for vitiation of *Kapha Dosha* leads to initiation of *Samprapthi* of *Sitada*. Further, in modern dentistry, it is mentioned that sweet food items more frequently initiates dental plaque formation.

CLEANING MATERIAL

Out of 60 patients, 90% were using toothpaste as the cleaning material and 10% were only using toothpowder as cleaning material. Most of them preferred choice of dentifrice as toothpaste because of the habit of using it from childhood. Other reasons included ease of use, better cleaning ability and fresher breath.

TIMES OF BRUSHING

Out of 60 patients, 67% were brushing once daily and 33% were only brushing twice daily. Indicates lack of importance of oral hygiene after taking food. It results in bacterial growth at the place of food collection resulting in dental plaque.

BRUSHING TECHNIQUE

Out of 60 patients, 38% were brushing horizontally, 18% vertically, 32% horizontally and vertically, 12% circular. Most of them were brushing horizontally which is an improper pattern by which debris at interdental area, pits, and fissure areas and more or less at cervical areas may not be removed, which plays major role in initiation or progression of the disease.

BRISTLES USED

Out of 60 patients, 18% were using soft bristles, 47% were using medium bristles and 35% were using hard bristles. Most of the subjects were using medium bristles. Medium to hard bristles damages the gingiva and its frequent use leads to increased friction leading to gingivitis or it may injure the enamel and cause abrasion of tooth surface.

RESULT

Effect of treatment

Group A

In clinical features, 100% relief was found in *Akasmath Rakthasrava* and *Shotha*, 90% in *Krishnatha*, *Dantamamsa Mrudutha* and *Prakledatha*, 87% in *Mukhadaurgandhya*, which are statistically significant ($P < 0.05$). The statistical analysis reveals that in group A, the initial mean score shows reduction in symptoms.

On objective criteria, both the objective parameters that is gingival index and plaque index were improved by 86% and 84% respectively and the result being statistically significant ($P < 0.05$).

Group B

In clinical features, 100% relief was found in *Akasmath Rakthasrava* and *Shotha*, 91% in *Krishnatha*, 93% in *Mrudutha*, 92% in *Prakledatha* and 90% in *Mukhadaurgandhya*, which are statistically significant ($P < 0.05$). The statistical analysis reveals that in group A, the initial mean score shows significant reduction in symptoms.

On objective criteria, both the objective parameters that is gingival index and plaque index were improved by 89% and 85.8% respectively and the result being statistically significant ($P < 0.05$).

Comparative effect of treatment

Effect of *Patadi Pratisarana* and *Priyanguvadi Pratisarana* on chief complaints of *Sitada* (Gingivitis) shows that, statistically significant difference was obtained in all the parameters. In Group A comparison with Group B, data reveals that Group B has been shown better effect on subjective parameters than Group A. The comparative effect on objective parameter reveals that Group A shown statistically significant difference to that of Group B in two indices i.e., plaque index and gingival index, the results were significant statistically with $P < 0.05$ level.

DISCUSSION

Akasmath Rathasrava-

Group A and group B showed 100% relief in *Akasmath Rakthasrava*. *Patha*, *Lodra*, *Manjista*, *Musta*, *Priyangu* are having the properties of *Rakthapittagna*, *Rakthashodaka* and *Stambhana* properties.

Shotha

Group A and group B showed 100% relief in *Shotha*. *Pratisarana* will have a constant irritation to the gingival tissues thereby producing pseudo-inflammatory reaction on tissues and in turn it causes altered permeability of the blood capillaries. *Haridra*, *Daruharidra*, *Lodra* drugs are having anti-inflammatory properties.

Krishnatha-

Group B shows better result than group A in *Krishnatha*. Gingival massage produces epithelial thickening, increased keratinization and increased mitotic activity in the epithelium and connective tissue. *Manjista*, *Lodhra*, *Haridra* is having antioxidant properties.

Dantamamsa Mrudutha-

Group B shows better result than group A in *Dantamamsa Mrudutha*. Gingival massage produce epithelial thickening ,increased keratinization and increased mitotic activity in the epithelium and connective tissue.

Dantamamsa Prakleda-

Group B shows better result than group A in *Prakledatwa*. Rate of gingival cervical fluid production is increased by gingival massage which is done in *Pratisarana*. This fluid inhibits bacterial diffusion into the tissues as it has phagocytic leukocytes, specific antibodies.

Mukhadaurgandhya-

Significant reduction of was observed in both groups after treatment with $P<0.05$.On comparing the 2 groups ,there is no significant difference between both the groups. *Pratisarana* promotes salivation which brings faster cure. By *Pratisarana*, mechanical pressure is exerted on gingiva in the direction of sulcus which removes food debris, plaque, necrotic tissue remanent ,inflamed granulation tissue and bacterial colonies.

Gingival index-

Significant reduction of was observed in both groups after treatment with $P<0.05$.the effect was maintained during follow up also in both the groups. While comparing mean score difference between the group ,Group B shows better result than group A

Pratisarana will have a constant irritation to the gingival tissues there by producing pseudo-inflammatory reaction on tissues and in turn it causes altered permeability of the blood capillaries. Group B drugs are having anti-inflammatory and anti-bacterial properties.

Plaque index-

Significant reduction of was observed in both groups after treatment with $P<0.05$.the effect was maintained during follow up also in both the groups. On comparing the 2 groups ,there is no significant difference between both the groups. By *Pratisarana* ,mechanical pressure is exerted on gingiva in the direction of sulcus which removes food debris, plaque, necrotic tissue remanent ,inflamed granulation tissue and bacterial colonies.

CONCLUSION

- ✓ In the study which involved 2 groups. Group A involving *Priyanguvadi Pratisarana* and Group B involving *Patadi Pratisarana*, within each groups, the tested statistics showed highly significant results and on comparative analysis between the groups, it showed statistically significant difference.
- ✓ On comparing percentage-wise ,both the group showed effect on subjective parameters like *Akasmath Rakthasrava*, *Shotha*, *Krishnatha*, *Dantamamsa Mrudutha*, *Dantamamsa Prakleda* and Objective parameters like Gingival index and Plaque index with Group B showing better percentage wise relief than Group A.
- ✓ Both the group showed 100% relief in *Akasmath rakthasrava*.

- ✓ So, considering all the observations, There is statistically significant difference in the effect of *Priyanguvadi Pratisarana* and *Patadi Pratisarana* with *Patadi Pratisarana* having better effect than *Priyanguvadi Pratisarana* in *Sitada* (Gingivitis).

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