

# Efficacy of Gandusha on Oral Health: A Potential Natural Ayurvedic Remedy for Gutkha Chewers

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## Abstract

Now a days Gutkha chewing has become more common and the greatest threat to global health. It increases the risk of bad oral health and if oral hygiene is neglected, it may exacerbate in various forms of oral and periodontal diseases and finally contributes many oral cancers and even systemic diseases. Currently, there are no reliable predictors of which individuals are susceptible to this progression. But oral harmony can be restored by promoting good oral hygiene which can minimize the risk of deleterious effects of Gutkha on the oral tissues. Aurveda describes Gandusha therapy under the context of Dinacharya (daily regimens) for oral health care. It has curative as well as preventive properties. Hence the present project is an attempt to evaluate the efficacy of Gandusha on oral health; a potential natural Ayurvedic remedy for Gutkha chewers. The specific target of intervention is to check through the practice of Triphala Kwatha Gandusha. In the present study, a total of 30 subjects of Gutkha chewers were selected based on selection criteria. They were advised Triphala Kwatha Gandusha for two times in a day for 30 days. Follow up was taken on 31st day. The study revealed that statistically Triphala Kwatha Gandusha showed better effect and it was found to be highly significant. Finally, the finding suggests that Gandusha (Triphala Kwatha) is the safest, simplest and effective potential natural Ayurvedic remedy for Gutkha chewers.

**Keywords:** Gandusha; Oral health care; Triphala Kwatha; Gutkha chewers

## Introduction

Now a days Gutkha chewing has become more common. The rate of Gutkha consumption in various forms has been increasing rapidly in recent years. Today it is the greatest threat to global health. According to NFHS-III, in India, 55.8% of male, 10.8% of female in the age group of 12 to 60 years are consuming tobacco. Among males, 32.7% smokers while 36.5% of tobacco chewers are reported; while among females, it is reported to be 1.4 and 8.4% respectively[1].

Gutkha is known to have a deleterious effect on the tissues. It increases the risk of bad oral health. In such a case, if oral hygiene is neglected, it may exacerbate in various forms of oral and periodontal diseases and finally contributes many oral cancers and even systemic diseases. Currently, there are no reliable predictors of which individuals are susceptible to this progression. But oral harmony can be restored by promoting good oral hygiene which can minimize the risk of deleterious effects of Gutkha on the oral tissues. So the prevention and control are essential in every case.

Ayurveda describes Gandusha therapy (oral retention therapy) for under the context of Dinacharya (daily regimens) for oral health care. It is the procedure of holding any medicated oil, Ghrita (ghee) or any liquid in the mouth to its full capacity for a specific time without allowing any movement inside the mouth [2,3]. It has curative as well as preventive properties. It exerts cleansing action and promotes the defence mechanism in the oral cavity and thus maintains and promotes oral hygiene. The pharmacodynamics properties of Triphala Kwathamay act on micro-organisms and

might help to alleviate the oral problems of Gutkha chewers [4-6].

Keeping in view above concepts, the present project is an attempt to evaluate the efficacy of Gandusha on oral health; a potential natural Ayurvedic remedy for Gutkha chewers. The specific target of intervention is to check through the practice of Triphala Kwatha Gandusha

## Aims and Objectives

The present study has been aimed to highlights the Gandusha is one of the Upakrama (remedy) for Gutkha chewers in the maintenance of oral hygiene. The specific objective of the study was to evaluate the efficacy of Gandusha in Gutkha chewers in the maintenance of oral hygiene.

**Literary sources:** The literary data was collected from classical textbooks of Ayurveda and modern science, articles from periodicals, journals and other published works and related data from the internet.

**Clinical sources:** The subjects of Gutkha chewers were selected from OPD and Camp conducted by BVVS Ayurvedic medical college and hospital, Bagalkot.

**Drug sources:** The dry fruits of ingredients of Triphala were purchased from the pharmacy of BVVS Ayurvedic Medical College and Hospital, Bagalkot.

**Instruments:** The instruments such as dental tray, mouth mirror and explorer, William's periodontal probe, PH indicator strips were used.

pH of saliva  
OHI-S

## Materials and Methods

A total number of 30 subjects of Gutkha chewers were selected and registered for the present clinical study excluding dropouts. The selection was done based on the selection criteria of the study.

### Selection criteria

Diagnostic criteria

#### Subjective assessment parameters:

Sub Mucosal Fibrosis  
Burning Sensation  
Inflammation of Gums  
Sponginess of Gums  
Gum Recession  
Ulcers  
Halitosis

#### Objective assessment parameters:

OHI parameters<sup>7</sup>  
Gingival bleeding index  
Gingival index  
Plaque index  
Debris index

### Inclusion criteria

Fulfilling the subjective parameters.  
Either sex aged between 20-50 yrs.  
Consuming at least 5 Gutkha packets a day.  
The habit of Gutkha chewing for a minimum of 3 months.  
Patients who are willing to sign the informed consent.

### Exclusion criteria

Underwent Periodontal therapy, Oral cancer.  
On Antibiotics treatment.  
Chewing tobacco pan, tobacco leaf and Smokers  
Who were non-cooperative.

**Withdrawal criteria:** Subjects who get any unwanted effect or complication during the study will be withdrawn from the study and will be treated accordingly.

**Research design:** The study was an open clinical trial. A detailed clinical case proforma was prepared as per the research study. All subjects conforming to above said selection criteria was included in the study. They were assigned to a single group and received the following treatment protocol (Table 1). Routine investigations of blood and urine were carried out to rule out any systemic diseases if any [7].

N	Particulars	Trial group
1	Sample size	30
2	Medicine	Triphala Kwatha
4	Procedure	Gandusha Karma
5	Route of administration	Oral
6	Dose and	Mukhapurna-Twice/day
	Schedule	Morning: After brushing, three times
		Night: After brushing, before going to bed, two times
7	Duration	30 days
8	Follow up and evaluation	31 <sup>st</sup> Day
9	A clear demonstration of the Gandusha Dharana procedure was done to all. Instructions regarding special care of Ahara (food) and Vihara (activity) were advised. Oral hygiene methods and their importance in the reversal of the disease were explained to the patients of all the groups.	

**Table 1:** Particulars of the treatment protocol.

### Triphala Kwatha

The Triphala Kwatha was selected for Gandusha karma. It was meant for oral hygiene supplementation therapy in the subjects of Gutkha chewers. The ingredients of Triphala Kwatha are 8:

Amalaki (*Emblica officinalis*) : 1 part

Bibhitaki (*Terminalia belerica*) : 1 part

Haritaki (*Terminalia chebula*) : 1 part

Jala (Water) : 16 parts

**Criteria for assessment of results:** The effect of treatment was assessed based on relief in the subjective parameters and objectively on the improvement in oral health index. The scoring pattern adopted for the study was prepared depending upon the severity of the subjective and objective parameters. The scoring pattern was given from 0 to 4 depending upon the severity. The assessment of the results was done based on the reduction in the severity of the sign and symptom like 1° reduction, 2° reduction, 3° reduction, stable and deteriorating condition.

**Criteria for assessment of the total therapy:** The total effect of the therapy was assessed based on the reduction in subjective and objective parameters. The subjects were grouped into the following six categories:

Cured : 100% reduction

Marked improvement : Above 75% reduction

Moderate improvement : Above 50%-75% reduction

Mild improvement : Above 25%-50% reduction

Unchanged : 0-25% reduction/No reduction

Deteriorated : Clinically deteriorated

**Data collection and statistical analysis:** The statistical data were collected, properly documented and statistically analyzed with the help of a statistician. The data was computed for Mean, Standard deviation, Standard error, 'T' value and 'P' value was obtained by using students paired 'T' test. Significance interpreted as P>0.05 as Not significant, P<0.05 and 0.01 as Significant and P<0.001 as Highly significant.

## Observations

In this clinical trial, it was found that the maximum number of the subjects reported in the age group of 31-40 years, were of Hindus,

educated up to SSLC level, belonged to Business class followed by Peon. 60% of the subjects were taking Vimala Gutkha brand. 36.66% were taking four Gutkha pouches per day followed 30% more than five pouches. 43.33% were taking Gutkha since from 9-12 years followed by 23.33% since 5-8 years.

Complaint wise distribution revealed that all the subjects of Gutkha chewers had a complaint of inflammation of gums, sponginess of gums and halitosis. Burning sensation of the mouth was present in 96.66% of subjects, gum recession in 73.33% subjects, submucosal fibrosis in 50% subjects and mouth ulcers in 10% subjects.

On oral examination, all the subjects of Gutkha chewers had Acidic nature of pH of saliva. Abnormal Gingival Index was present in 96.66% subjects. 90% of subjects were abnormal Debris Index, 60% were Gingival Bleeding Index and 53.33% of subjects were abnormal Plaque Index. This indicates the lack of motivation regarding oral hygiene and inaccessibility to periodontal care facilities [8].

## Results

**Evaluation of the effect of treatment:** Subjects of Gutkha chewers did not show considerable relief in submucosal fibrosis, the recession of gums and ulcers in the mouth and the difference was also not significant statistically (P>0.05). Relief of 96.55% was observed in the burning sensation of the mouth, 83.33% relief was in halitosis, 60% relief was in inflammation of gums, 56.66% relief was in sponginess of gums and all were statistically highly significant at the level of P<0.001. Improvement of 93.33% was obtained in the pH of Saliva, 93.10% was in the Gingival Index and 83.33% was in the Gingival Bleeding Index, which was statistically highly significant at the level of P<0.001. Plaque Index and Debris Index was improved up to the extent of 31.25% and 18.51% respectively, which was statistically significant at the level of P<0.05. The OHI-S index was improved up to the extent of 74.19%, which was statistically highly significant, P<0.001 (Tables 2).

Chief complaints	Mean score		Relief (%)	SD	SE	t value	P value	Remarks
	BT	AT						
Subjective parameters								
Submucosal fibrosis	1.6	1.57	6.66	0.67	0.12	1	>0.05	NS
Inflammation of gums	2.43	1.37	60	0.5	0.09	23.02	<0.001	HS
Recession of gums	2.03	1.9	4.45	0.81	0.15	2.11	>0.05	NS
Sponginess of gums	2.5	1.5	56.66	0.57	0.1	14.74	<0.001	HS
Burning sensation of the mouth	2.53	1.03	96.55	0.57	0.1	14.35	<0.001	HS
Ulcers in the mouth	1.1	1	6.66	0.31	0.06	1	>0.05	NS
Halitosis	2.37	1.17	83.33	0.38	0.09	16.15	<0.001	HS
Objective parameters								

Gingival Bleeding Index	1.7	1.07	83.33	0.25	0.05	6.23	<0.001	HS
Gingival Index	2.07	1.07	93.1	0.25	0.07	20.85	<0.001	HS
Plaque Index	1.67	1.37	31.25	0.56	0.13	3.52	<0.05	S
Debris Index	2.33	2.07	18.51	0.83	0.15	3.24	<0.05	S
pH of Saliva	2.07	1.07	93.33	0.25	0.05	20.85	<0.001	HS
OHI-S	2.17	0.56	74.19	0.21	0.05	7.81	<0.001	HS

**Table 2:** Effect of therapy on trial group.

## Discussion

The literature research showed that there are relatively few reports on the harmful effects of Gutkha chewing increases the risk of bad oral health and if oral hygiene is neglected, it may exacerbate in various forms of oral and periodontal diseases and finally contributes many oral cancers and even systemic diseases [9,10]. However, oral problems are reversible with successful treatment and good oral hygiene.

Gandusha is beneficial in Shodhana (cleaning by pressure) of the oral cavity. Retention and direct absorption of the medicine in the oral cavity (gingival epithelium) reduces the infection. Thus Gandusha helps to maintain and promotes oral hygiene and can prevent the problems of the oral cavity.

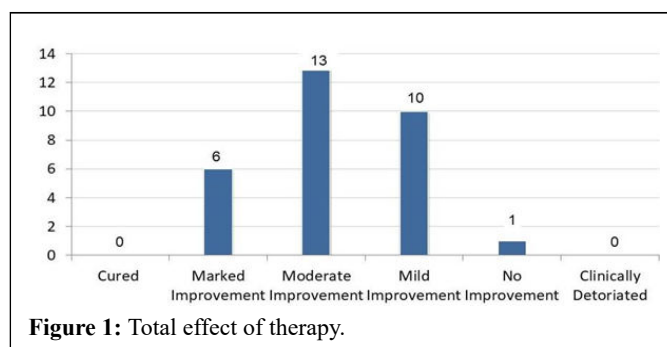
The properties of Triphala Kwatha such as Tridoshaghna (Kapha pittaghna), Srotoshodhaka, Shothahara, Vedana Sthapana, Krumighna, Rakta Shodhaka, Rakta Sthambhaka, Mukha Shodhaka, Lekhana, Rasayana and its pharmacodynamics properties like anti-inflammatory, anti-microbial, anti ulcer, immunomodulatory and anti oxidant might help to alleviate the oral problems of Gutkhā chewers.

Analysis of the overall effect of the treatment in the subjects of Gutkha chewers showed good improvement. The treatment was given with thirty days of Gandusha with Triphala Kwatha which has shown a highly significant reduction in the oral problems in the subjects of Gutkha chewers. None of the patients developed any complications, or any untoward symptom or any side effects during treatment in the study group and therefore the treatment modalities are safe and are of therapeutic value. The observations indicate that the subjects of Gutkha chewers have shown improvement in all the criteria of assessment of their oral problems due to Gutkha chewing. The therapeutic effects like inflammation of the gums, sponginess of the gums, halitosis, gingival bleeding index and gingival index are relieved and regain the oral health. The ultimate effect will be in improving oral health, particularly in gingival health [11].

In a clinical trial group out of 30 subjects who received Triphala Kwātha Gandusha 20% of the subjects were noted marked improvement 43.33% showed moderate improvement and 33.33% showed a mild improvement and 3.33% subject showed poor improvement in subjective and objective parameters. (Table 3 and Figure 1) This indicates Triphalā Kwatha Gandūsha is beneficial to remedy for Gutkha chewers.

SN	Assessment	Frequency	Percentage
1	Cured	NIL	-
2	Marked Improvement	6	20%
3	Moderate Improvement	13	43.33%
4	Mild Improvement	10	33.33%
5	No Improvement	1	3.33%
6	Clinically Detoriated	NIL	-
	Total	30	100%

**Table 3:** Total effect of therapy on trial group.



**Figure 1:** Total effect of therapy.

## Conclusion

Gandusha helps to maintain and promote oral hygiene and can prevent the problems of the oral cavity. Gandusha with Triphala Kwatha has shown highly significant results in the management of oral problems of Gutkha chewers. It would help to remove the gingival pathology and manages the oral problems due to Gutkha chewing. The repeated advocacy of Gandusha therapeutic strategy will provide a better result. Hence Gandusha is an effective treatment modality in a wide range of ailments of the oral cavity and may be considered as a potential natural Ayurvedic remedy for Gutkha chewers. Further, there is a need to increase awareness about oral hygiene in society.

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