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Evaluation of *Chaturjaat Kawala* in the management of *Mukh Daurgandhya* and its Antimicrobial Effect in Oral Hygiene

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ABSTRACT

Oral illnesses can develop as a result of poor oral hygiene. *Kawala* process is mentioned in *Ayurveda* texts to treat oral illnesses. *Chaturjaat* and its *Mukhghandh Har* property is mentioned in '*Karpuradi Varg*' of *Bhavprakash Nighantu*. *Kawala* of *Chaturjaat* made from *Hima* process is used here to treat *Mukh Daurgandhya* and to see its effect in antimicrobial study. Two groups of 30 patients each are included in this study. One group was given *Chaturjaat* while other 30 were given lukewarm water *Kawala*. It was seen that *Chaturjaat Kawala* was more effective in subjective criteria of oral hygiene as well as in antimicrobial study.

Key words: Oral hygiene, *Chaturjaat*, *Mukh Daurgandhya*, *Kawala*, *Hima*.

INTRODUCTION

The fundamental goal of *Ayurveda* is to maintain and promote good health, with disease cure coming in second. In *Ayurveda*, "*Swasthya Samrakshana*" refers to preventive health treatment. It effectively conveys the significance of personal hygiene. The ultimate aim of any medical science is for attainment of level of health, this enables every individual to lead socially and economically productive life. In this regard *Ayurveda* stands first, as it is the science, which primarily aims at preservation of positive health.

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The *Mukha*, or oral cavity, is one of the most significant parts of the *Urdhwajatru* because it acts as a mirror of body health by acting as the entryway to the alimentary canal. Oral illnesses can develop as a result of poor oral hygiene. *Susruta* describes the *Mukharogas* in *Nidana Sthana* (diseases affecting the oral cavity). *Susruta* divided *Mukha's* sickness into seven sub-sites, namely *Austa*, *Danta*, *Dantamula*, *Jihwa*, *Talu*, *Kantha* and *Sarvasar*.

According to Govt. of India, there are 253 million adolescents in the age group 10-19 years in India. This age group comprises of individuals in a transient phase of life requiring nutrition, education, counselling and guidance to ensure their development into healthy adults. They are susceptible to several preventable and treatable health problems, like early & unintended pregnancy, unsafe sex leading to STI/HIV/AIDS, nutritional disorders like malnutrition, anaemia & overweight, alcohol, tobacco and drug abuse, mental health concerns, injuries & violence.

Dental (oral) problems are caused by microorganisms in our mouth. Natural gargle may naturally eradicate bacteria in our mouth without the use of hazardous chemicals, and it is also more acceptable and safer than

synthetic medications and mouthwashes containing alcohol.

Here, *Chaturjaat Churna* having property of *Mukhgandhhar* which is mentioned in *Karpuradi Varg* of *Bhavprakash Nighantu*.^[1]

Mukha Rogas is well explained by its name in *Sushruth Samhita* and *Ashthang Hridhya*. *Acharya Sushruth* also mentioned *Trikatu* for 'Pratisarana' in *Mukhroga Chikitsa*. *Mukh Daurgandhya* is not mentioned as separate disease but it is seen as a symptom of some disease.^[2]

Chaturjata is used as *Prakshepa Dravyas* in various *Kalapana* to give them good taste, pleasant flavor and to augment appetite. Because of aromatic or *Sugandhi*, they give pleasure to the mind. They act as mouth fresheners.

Chaturjaat have the properties of *Rochan*, *Ruksha*, *Tikshna*, *Ushna*, *Mukhgandhhar*, *Laghu*, *Agni Vardhak*, *Varnya* and pacify *Kapha*, *Vaat*, *Visha*.^[3]

Chaturjaat is used as *Hima* and the reason behind this is, *Chaturjaat* contains medicines which have aromatic properties in it. Aromatic properties fade away once they are boiled with water so it is better to use *Hima* instead of *Kwath* of *Chaturjaat*.

In childhood and old age, *Kavala* is frequently chosen over *Vaya* or *Avastha Anusasra*. Because correct tone of the muscles of the oral cavity is not achieved in children, the act of *Kavala* must be performed to strengthen them. Due to degenerative processes, muscles become flaccid and lose their tonicity as people age. As a result, *Kavala* is suggested.^[4]

Procedure Review

Definition^[5]

- The material used moves easily in the mouth is *Kawala*.
- Medicated fluids are kept in the mouth incompletely and asked to rotate in the mouth for a specific time and then asked to spit it out.
- As per *Sarangadhara*, *Kalka* (medicated bolus) drugs are used in *Kawala* and liquids are used in *Gandusha*.

Dharana Kala (duration): *Gandusha* and *Kawala* should be used after the age of 5 year. These can be used three, five, seven times or till balancing of *Doshas*.

Effects of the Procedures^[6]

Samyak Yoga Lakshana (proper effects)

- *Vyadherpachaya* (palliation of diseases or illness),
- *Tushti/ Santosh* (freshness of oral cavity),
- *Vaishadhyam /Nirmalta* (cleaning of mouth),
- *Vaktralaghavam*(lightness of mouth),
- *Indriyanam Prasada* (sense organs tend to their work)

Heena Yoga Lakshana (inadequate effects)

- *Kaphotklesh* (excessive salivation),
- *Rasaagyana* (improper functioning of taste buds),
- *Aruchi* (anorexia),
- *Jadata* (stiffness)

Atiyoga Lakshana (excessive effects)

- *Mukha Paka* (mouthulcers),
- *Mukha Shosha* (dryness of mouth),
- *Trishna* (thirst),
- *Klama* (feeling of exhaustion)

Benefits of *Gandusha* and *Kawala*

It strengthens the jaw and improves quality of voice & muscle mass, clears the tongue so that appetite and sense of taste improves, prevents dryness of throat and prevents chapped lips. It strengthens the teeth and gums & also prevents sensitivity of teeth. It also seen effective in diseases like spondylitis, headache, maintaining the eyesight, dryness of mouth and rhinitis and many more supra clavicular diseases.

Hima^[7]

Chaturjaat is used as *Hima* and the reason behind this is, *Chaturjaat* contains medicines which have aromatic properties in it. Aromatic properties fade away once they are boiled with water so it is better to use *Hima* instead of *Kwath* of *Chaturjaat*.

Hima (Cold Infusion): The raw drug is crushed or powdered coarsely (in quantity of 1 *Pala* = 48gm) is mixed and soaked (in quantity of 6 *Pala* = 288gm) in water for whole night. In morning it is filtered and this medicated liquid is collected which is called as *Hima* (cold infusion).

Hima Kashaya is, thus, prepared in cold water (while *Phanta* is made in hot water). As general proportion, powdered drug 24gms is soaked in 144ml water and retained for a night. Lastly, the liquid is strained in morning, e.g., *Dhanyaka Hima*.

Drug Review^[8]

Chaturjaat and its *Mukhgandh Har* property is mentioned in '*Karpuradi Varg*' of *Bhavprakash Nighantu*.

Chaturjaat have the properties of *Rochan*, *Ruksha*, *Tikshna*, *Ushna*, *Mukhgandhhar*, *Laghu*, *Agni Vardhak*, *Varnya* and pacify *Kapha*, *Vaat*, *Visha*.

All the four herbs; stem bark of *Twak*, fruit and seeds of *Ela*, leaves of *Tejapatra* and stamen of *Nagkeshar* were taken in equal quantity and powdered together.^[9]

S N	Sanskrit name	Latin name	Family	Vishista Karma	Dosha har karma	Rogaghanata
1	<i>Tavaka</i>	<i>Cinnamomum zeylanicum</i>	Lauraceae	<i>Sangrahi</i>	<i>Vata kapha Shama ka</i>	<i>Pinasa, Kasa</i>
2	<i>Ela</i>	<i>Elettaria cardamomum</i>	Zinziberaceae	<i>Rochana Pachana</i>	<i>Tridosha Hara</i>	<i>Kasa, Shwasa</i>
3	<i>Tejapatra</i>	<i>Cinnamomum tamala</i>	Lauraceae	<i>Sangrahi</i>	<i>Vata kapha Shama ka</i>	<i>Pinasa, Kasa</i>
4	<i>Nagkeshar</i>	<i>Mesua ferrea</i>	Guttiferaceae	<i>Rakta Stambhan</i>	<i>Kapha pitt</i>	<i>Raktarsh</i>

					<i>Shamaka</i>	
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Result of Antimicrobial study

S N	Microbial Strains	Standard (Positive control)	Chaturjaat Churna		DMSO (Negative control)
			5mg/ml	10mg/ml	
1	<i>Porphyromonas gingivalis</i>	24	24	26	8
2	<i>Prevotella intermedia</i>	30	24	28	8

MATERIALS AND METHODS

Materials and methods required to conduct the trial are as under:

Literary

For literary analysis various *Ayurvedic* Classical Texts and modern medical texts have been referred to study *Mukhdaurgandhya* and *Halitosis* respectively.

Clinical

It includes the investigations, observation of cases and trial procedures.

Study Design

Type of Study - Clinical trial was randomized. In therapeutically trial, important components are the Cases, the parameters for evaluation of results and the treatment.

Type of trial Methodology - It was an open trial.

Sources of Data

Cases suffering from *Mukhdaurgandhya* (*Halitosis*) who were fulfilling the inclusion and diagnostic criteria were chose from the O.P.D & I.P.D of Hospital of University Post Graduate Institute of *Ayurveda* Studies and Research, Jodhpur. 60 cases were registered in total for current trial. Out of which no cases dropped out.

The cases chosen for the research work were briefed about the nature of the trial, its positive and negative impact was also explained. Their consent was also obtained before trial.

Selection of Cases

- The study will be done on 60 volunteers in two groups and each group of 30 volunteers.
- Volunteers fulfilling the criteria for selection will be enrolled into the study irrespective of their gender, cast, religion etc.
- A specially designed proforma will be prepared and informed consent will be taken from the volunteer before trial.
- One group will be given '*Chaturjaat Kawala*' and the other group will use warm water for gargling.

Inclusion Criteria

- Cases between the age of 13-19 years.
- Both male and female candidates are included.
- Candidates with the complaint of foul breath or halitosis.
- Candidates with the complaint of *Asya Vairasya* (tastelessness) due to oral unhygienic condition.
- Candidates with the complaint of less *Annabhiruchi* (desire of food) due to oral unhygienic condition.
- Candidates with the complaint of *Uplepa* (feeling of coating in the mouth).

Exclusion Criteria

- Patients less than age of 13 years and more than 19 years.
- Patients of oral cancer.
- Patients of Leucoplakia.
- Patients of oral chronic diseases.

Subjective Parameters

- *Mukh daurgandhya* (foulness of breath)/halitosis
- *Asya vairasyata* (tastelessness)
- Sensitivity of teeth

- *Saumanasya* (pleasantness/freshness)
- *Annabhiruchi* (desire of food)
- *Uplepa* (feeling of coating in the mouth)
- pH of Saliva

Withdrawal Criteria

- If case wants to withdraw from clinical trial.
- During the course of the trial, if any serious conditions occur or any serious adverse effect is seen which requires emergency treatment.
- Non-compliance of Cases.
- During the course of treatment if volunteer gets pregnant.

Antimicrobial study

Antimicrobial study of *Chaturjaat Churna*

Criteria of Assessment

Subjective parameters were put in use for the assessment the effect of the treatment.

Subjective Criteria includes

- *Mukh Daurgandhya* (foulness of breath)/halitosis
- *Asya Vairasyata* (tastelessness)
- Sensitivity of teeth
- *Saumanasya* (pleasantness/freshness)
- *Annabhiruchi* (desire of food)
- *Uplepa* (feeling of coating in the mouth)
- pH of saliva

Based on the grading score, improvement in signs and symptoms were assessed.

Plan of Study

Cases without any discrimination based on sex, religion, caste, age etc are randomly distributed into 2 groups.

Group A - 30 Trial cases were treated with *Chaturjaat Kawala*.

Group B - 30 Trial cases were treated with Lukewarm water *Kawala*.

Table - Classification of cases in groups.

Group	Detail of group	No. of registered cases	Cases completing the trial	Duration of trial
A	Chaturjaat Kawala	30	30	30 days
B	Lukewarm water	30	30	30 days
Total no. cases and trial duration		60	60	30 days for each group

Drug administration Schedule with Dosage and Timings

Drug	Dose	Duration	Sevan Kala
1. Chaturjat Kawala (Hima)	Every morning use 20 ml drug 3 times repeatedly, Total 60 ml.	30 to 40 seconds for one time, total 3 times every morning repeatedly for 30 days.	Morning
2. Lukewarm water	Every morning use 20 ml drug 3 times repeatedly, Total 60 ml.	30 to 40 seconds for one time, total 3 times every morning repeatedly for 30 days.	Morning

OBSERVATION

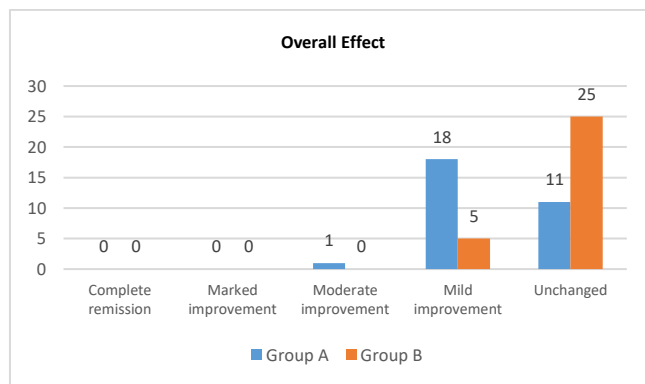
Overall assessment of effect of the therapy on both the groups

Assessment criteria	Group - A		Group - B	
	No. of Patients	%	No. of Patients	%
Complete remission	0	0 %	0	0 %
Marked improvement	0	0 %	0	0 %

Moderate improvement	1	3.33 %	0	0 %
Mild improvement	18	60 %	5	16.66 %
Unchanged	11	36.66%	25	83.33%

In group-A: 0% was found complete remission, 0% were found marked improvement, 3.33% were found moderate improvement, 60% were found mild improvement and 36.66% was found unchanged.

In group-B: 0% was found complete remission, 0% were found marked improvement, 0% were found moderate improvement, 16.66% were found mild improvement and 83.33% was found unchanged.



% Improvement of Subjective Parameters in Both Groups

SN	Parameters	Result in percentage	
		Group A	Group B
1.	Mukh Daurgandhya (foulness of breath)	46.37	17.46
2.	Aasya Vairasyata (tastelessness)	37.5	23.25
3.	Saumanasya (pleasantness/freshness)	26.08	13.95
4.	Annabhilasha (desire of food)	23.80	17.27
5.	Uplepa (coating of mouth)	28	26.82
6.	Sensitivity of tooth	25	15.38

7.	pH of Saliva	28.57	18.91
Average % of Relief		30.76 %	19.005 %

The improvement in Oral hygiene and *Mukh Daurgandhya* were found to the maximum in Group-A (30.76%), followed by Group-B (19%). These results prove that the Group-A i.e., *Chaturjaat Kawala* is more effective in oral hygiene and *Mukhdaurgandhya* than the Group-B i.e., Lukewarm water *Kawala*.

RESULTS

Comparative effect of therapy on Subjective Parameters

To assess the comparative effect of both the therapy, Mann-Whitney test was applied on data using GraphPad InStat Software which is shown in above table and their interpretations are stated below.

Overall Effect of the therapy on subjective symptoms of oral Hygiene

Subjective Parameters	Mean score		% Relief		U	P	S
	Group A	Group B	Group A	Group B			
<i>Mukh Daurgandhya</i>	1.06	0.36	46.37	17.46	192	<0.0001	E S
<i>Aasya Vairasyata</i>	0.64	0.35	37.50	23.25	280	0.0316	S
<i>Saumanasya</i>	0.44	0.23	26.08	13.95	276	0.0872	N S
<i>Annabhilasha</i>	0.35	0.33	23.80	18.91	287	0.4467	N S
<i>Uplepa</i>	0.5	0.44	28.0	26.82	322	0.3091	N S
Sensitivity of tooth	0.46	0.26	25	15.38	239	0.1115	N S
PH of Saliva	0.34	0.29	28.57	18.91	260	0.3715	N S

*n- no. of samples, B.T.- Before Treatment, A.T.- After Treatment, Diff- difference between the value of B.T. and A.T, U-Mann Whitney

constant, 'P' value -Probability of Observations S-significance of obtained p-value

To assess the comparative effect of both the therapy, Mann-Whitney test was applied on data using GraphPad InStat Software which is shown in above table and their interpretations are stated below.

Mukh Daurgandhya (foulness of breath): On comparing the effect of both therapy on *Mukh Daurgandhya* obtained p value is <0.0001 i.e., extremely-significant difference statistically. Percentage wise Group A (46.37%) showed better relief then Group B (17.46%).

Aasya Vairasyata (tastelessness): On comparing the effect of both therapy on *Aasya vairasyata* obtained p value is 0.0316 i.e., significant difference statistically. Percentage wise Group A (37.50%) showed better relief then Group B (23.25%).

Saumanasya (pleasantness): On comparing the effect of both therapy on *Saumanasya* obtained p value is 0.0872 i.e., non-significant difference statistically. Percentage wise Group A (26.08%) showed better relief then Group B (13.95%).

Annabhilasha (desire of food): On comparing the effect of both therapy on *Annabhilasha* obtained p value is 0.4467 i.e., non-significant difference statistically. Percentage wise Group A (23.80%) showed better relief then Group B (18.91%).

Uplepa (tastelessness): On comparing the effect of both therapy on *Uplepa* obtained p value is 0.3091 i.e., non-significant difference statistically. Percentage wise Group A (28.0%) showed better relief then Group B (26.82%).

Sensitivity of tooth: On comparing the effect of both therapy on Sensitivity of tooth obtained p value is 0.1115 i.e., non-significant difference statistically. Percentage wise Group A (25%) showed better relief then Group B (15.38%).

PH of Saliva: On comparing the effect of both therapy on PH of Saliva obtained p value is 0.3715 i.e., non-significant difference statistically. Percentage wise Group A (28.57%) showed better relief then Group B (18.91%).

CONCLUSION

Prevalence of *Mukhdaurgandhya* in teen agers is increasing because of changed unhealthy eating habits of junk food and cold drinks. Excessive stress induced by pressure of competitive studies resulting into skipping of regular practice of oral hygienic procedures. Anti-microbial Susceptibility showed against both bacteria *Porphyromonas gingivalis*, *Prevotella intermedia* in *Chaturjaat* sample. The cost effective, simple, yet effective treatment of *Chaturjaat Kawala* could easily be employed by patient for a longer run. *Kawala* procedure also helps in boosting the oral cavity wellbeing by providing a nourishment to oral cavity and strengthens buccal muscles. *Vihara* (confined to *Nidra*) wise distribution shows higher incidence who had history of *Ratri Jagarana* due to some cause. It can be assumed that persons during *Ratri Jagarana* will have irregular food habits, no adequate sleep and rest and more stress, which is main cause for oral problem. *Divaswapna* is also considered as one of the cause of *Kapha Pitta Prakopaka* which is responsible for oral problem. The clinical study revealed that the use of *Chaturjaat Kawala* showed more efficient results than Lukewarm water in improving *Mukhdaurgandhya*, *Saumansyata*, *Anannabilasha*, *Ulepa*, *Sensitivity and pH*. In Anti-microbial study, almost same zone of inhibition found as compare to standard drug. It is presumed that quiet effective anti-microbial activity was reported. No adverse and side effect of the trial drugs were observed during the study.

REFERENCES

1. Bhavmishra, Bhav Prakash, Varanasi; Chokhambha Prakashan,2011; part 1, 5/24-44
2. Acharya Susruta, Susruta Samhita, nimh.nic.in/e-books; Chikitsa Sthan 40/62, Acharya Vagbhatta, Ashtang Hridaya, nimh.nic.in/e-books; Sutra Sthan 22/10
3. Bhavmishra, Bhav Prakash, Varanasi; Chokhambha prakashan,2011; part 1, 5/24-44
4. Dr. Shailja Srivastava, Sharangdhar Samhita, Varanasi; Chokhambha Orientalia,2009; Uttarkhanda 10/4
5. Dr. Shailja Srivastava, Sharangdhar Samhita, Varanasi;Chokhambha Orientalia,2009; Uttarkhanda 10/5-6
6. Dr. Shailja Srivastava, Sharangdhar Samhita, Varanasi; Chokhambha Orientalia,2009; Uttarkhanda 10/7
7. Acharya Siddhinandan Mishra, Yogaratnakar, Varanasi; Chokhambha Orientalia,2005; 5 Khanda.
8. Bhavmishra, Bhav Prakash, Varanasi;Chokhambha prakashan,2011; Karpuradi Varga 72-73
9. Chem. Pharm. Bull. 1981, 29, 2686, A text book of Dravyaguna Vignyana., API e book, Part-1, page 136,137

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