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A Study to Evaluate the Efficacy of *Tilayasthimadhu Kshira Gandush* in Management of *Dantaharsha* W.S.R. to Dentin Hypersensitivity

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ABSTRACT

A person's teeth are not just there to look attractive in pictures. Teeth allow you to follow a healthy diet and stay well nourished by preparing the food you eat for swallowing and digestion. Dantaharsha is characterized by inability to tolerate the Shita Pravata (cold air), Shita Bhakshya (cold food particles), Amla Rasa (Sour substance), pain and unable to do mastication or grinding of food due to vitiation of Vata. Dantaharsha can be correlated to Dental hypersensitivity in modern science. DH (Dentine hypersensitivity) is a condition with an incidence ranging from 4 to 74%. The clinical study was conducted on 30 patients' assessment has been done before, after and completion of follow up of treatment. The patients for the study were selected from RKM Ayurveda Medical College Hospital & PG Research centre, Vijayapur, Karnataka. The statistical data of study shows, Tilayasthimadhu Kshira Gandusha in management of Dantaharsha shown significance results p value < 0.05.
Interpretation & Conclusion: Tila is best among vata shamaka and its Vyavayi guna spreading throughout the body quickly, Yasthimadhu is having naturally occurring steroids, it does anti-inflammatory action, Milk is a most valuable food for the formation of bone. Phosphorus contents of cow's milk, Combination of all these drugs gives a layer of coating on the surface of the tooth and gingival thus protecting the dentine from exposure. Tilayasthimadhu Kshira Gandusha is proved to be cost effective, adoptive, safe and better drug of choice in the management of Dantaharsha.

KEY WORDS: Dantaharsha, Gandusha, Dentine Hypersensitivity, Tilayasthimadhu Kshira

INTRODUCTION

The glorious and beautiful smiles flash only with glossy white and well arranged teeth. A person's teeth are not just there to look attractive in pictures. Teeth allow you to follow a healthy diet and stay well nourished by preparing the food you eat for swallowing and digestion[1]. Taking good care of your mouth, teeth and gums is a worthy goal in and of itself. Healthy teeth may help you ward off medical disorders. An unhealthy mouth, especially if you have gum disease, may increase your risk of serious health problems such as heart attack, stroke, and poorly controlled diabetes[2].

Dantaharsha is considered under Danta roga[3]. Dantaharsha is characterized by inability to tolerate the Shita Pravata (cold

air), Shita Bhakshya (cold food particlas), Amla Rasa (Sour substance), pain and unable to do mastication or grinding of food due to vitiation of Vata[4]. Dantaharsha can be correlated to Dental hypersensitivity in modern science. Dentine sensitivity (DS) or Dentine hypersensitivity (DH) is one of the most commonly encountered clinical problems. "Dentine hypersensitivity is characterized by short, sharp pain arising from exposed dentine in response to stimuli, typically thermal, evaporative, tactile, osmotic or chemical and which cannot be ascribed to any other dental defect or pathology"[5]. Thousands of microscopic channels run through the dentine towards the centre of the tooth. Once the dentine is exposed, external triggers (such as a cold drink) can stimulate the nerves inside the tooth, causing the characteristic short, sharp sensation of tooth sensitivity[6].

DH (Dentine hypersensitivity) is a condition with an incidence ranging from 4 to 74%. The variations in the reports may be because of difference in populations and different methods of investigations. A slightly higher incidence of DH (Dentine hypersensitivity) is reported in females than in males. While DH (Dentine hypersensitivity) can affect the patient of any age, most affected patients are in the age group of 20–50 years, with a peak between 30 and 40 years of age[7]. Regarding the type of teeth involved, canines and premolars of both the arches are the most affected teeth. Buccal aspect of cervical area is the commonly affected site[8].

Various treatments have been explained in the management of Dantaroga including Kavala, Gandusha, Dhuma, Nasya, Shirobasti, Mukhadharan etc. In Modern science various treatment modalities are available which can be used at home or may be professionally applied. Desensitizing agents include toothpastes, mouthwashes or chewing gums and they act by either occluding the dentinal tubules or blocking the neural transmission and the other recent treatment options like bioglass, Portland cement, lasers and casein phosphopeptide etc[9]. The treatment available in Modern science is expensive and needs higher skills and surveillance of observation. In Ayurveda studies have been carried out with encouraging results for treatment with Gandusha.

AIMS AND OBJECTIVES OF STUDY

- To study in detail about the disease Dantaharsha and Dentine hypersensitivity.
- To Evaluate of efficacy of Tila Yasthimadhu Kshira Gandusha in the management of Dantaharsha

METHOD OF COLLECTION OF DATA

Study design: 30 screened patients of Dantaharsha will receive Gandusha for clinical trial study from Kshira prepared from Tila and Yashtimadhu kalka for duration of 14 days.

INCLUSION CRITERIA:

1. Patients presenting with clinical features of Dantaharsha as per classic will be selected
2. Patients of either sex will be taken.
3. Age between 16 to 70years.

EXCLUSION CRITERIA:

1. Patients suffering from Dental caries, Traumatized teeth, Pulpitis, Periodontal abscess, Bruxism
2. Patients suffering from any systemic illness which interfere the duration of course of treatment, syphilis, AIDS etc.
3. Patients below the age of 16 and above 70years.

DIAGNOSTIC CRITERIA

Diagnosis will be established on the basis of sign and symptoms of Dantaharsha

Posology: As required

Study duration: Treatment duration 14 Days

Follow up study: The patients will be followed up once in a week for 14days.

Drug	Procedure	Quantity	Duration	Follow up
Tilayashtimadhu kshiram	Gandusha	As required	3 sittings a day for 14days	Once a week for 3 weeks

NOTE; Gandusha will be administrated in morning, afternoon and evening after meals
Poorvakarma: The patient was made to sit comfortably in a room devoid of heavy breeze and dust. Mild massage and fomentation was given to the shoulder, neck, throat and forehead followed by swedana.

Pradhana karma: The patient was asked to keep his face slightly lifted up and advised to hold half full mouth of Tilayasthimadhu Kshira allowing to hold inside the mouth till the secretions occur in the mouth, nose and eyes.

Pashchat karma: After spitting out the contents, mouth was cleaned with lukewarm water; again mrudu swedana was given to shoulder, neck, throat, forehead and cheeks.

Assessment criteria:
Subjective criteria: Hypersensitivity of teeth towards cold substances, Hypersensitivity of teeth towards hot substances, Hypersensitivity of teeth towards sweet & sour substances

Objective criteria: Hyperemia of gums, Swelling of gums

RESULTS

1. Hypersensitivity of teeth towards cold substances

HS Cold	BT		AT		Difference in % (BT VS AT)	FU		Difference in % (BT VS FU)
	N	%	N	%		N	%	
No Discomfort	0	0	21	70.0	0%	20	66.7	60%
Mild Discomforte	2	6.7	9	30.0	23.3%	10	33.3	26.6.3%
Severe pain when stimulus applied	8	26.7	0	0	26.7%	0	0	26.7%
Severe pain persists after removal of stimulus	20	66.7	0	0	66.7%%	00	0	66.7%%
Total	30	100.0	30	100		30	100	
BT VS AT	X^2=53.455 P<0.001*					BT VS FU	X^2=53.333 P<0.001*	
*: Highly significant difference								

2. Hypersensitivity of teeth towards hot substances

HS HOT	BT		AT		Difference in % (BT VS AT)	FU		Difference in % (BT VS FU)
	N	%	N	%		N	%	
No discomfort	0	0	18	60.0	60%	14	46.7	46.7%
Mild Discomfort	4	13.3	12	40.0	26.7%	16	53.3	40%
Sever Discomfort when stimulus applied	6	20.0	0	0	13.4	0	0	6.7%
Severe pain persist after removal of stimulus	20	66.7	0	0	66.7%	0	0	66.7%
Total	30	100.0	30	100		30	100	
BT VS AT	X^2=66.026 P<0.001*					BT VS FU	X^2=66.726 P<0.001*	
*: Highly significant difference								

3. Hypersensitivity of teeth towards sweet & sour substances

SS-SWEET &SOUR	BT		AT		Difference in % (BT VS AT)	FU		Difference in % (BT VS FU)
	N	%	N	%		N	%	
No discomfort	0	0	24	80.0	80%	24	80.0	80%
Mild Discomfprt	6	20.0	5	16.7	3.3%	5	16.7	3.3%
Sever Discomfort when stimulus applied	1	3.3	1	3.3	0%	1	3.3	0%
Severe pain persist after removal of stimulus	23	76.7	0	0	76.7%	0	0	76.7%
Total	30	100.0	30	100		30	100	
BT VS AT	X^2= 38.800 P<0.001*					BT VS FU	X^2= 38.800 P<0.001*	
*: Highly significant difference								

4. Hyperemia of gums

Hypermia of gums	BT		AT		Difference in % (BT VS AT)	FU		Difference in % (BT VS FU)
	N	%	N	%		N	%	
No Hypermia	0	0	16	53.3	50%	19	63.3	60%
Mild Hypermia	1	3.3	13	43.3	43.4%	4	13.3	-13.3%
Moderate Hypermia	11	36.7	1	3.3	-33.4	1	3.3	33.4%
Severe Hypermia	18	60.0	0	0	-60%	6	20.0	-40%
Total	30	100.0	30	100		30	100	
BT VS AT	X^2=52.569 P<0.001*					BT VS FU	X^2= 34.533 P<0.001*	
*: Highly significant difference								

5. Swelling of gums

Swelling of gums	BT		AT		Difference in % (BT VS AT)	FU		Difference in % (BT VS FU)
	N	%	N	%		N	%	
No swelling of gums	0	0	16	53.3	53.3%	18	60.0	60.0%
Mild swelling of gums	1	3.3	9	30.0	26.7%	7	23.3	20%
Moderate swelling of gums	12	40.0	5	16.7	23.3%	5	16.7	23.3%
Severe swelling of gums	17	56.7	0	0	56.7%	0	0	56.7%
Total	30	100.0	30	100		30	100	
BT VS AT	X^2=42.118 P<0.001*					BT VS FU	X^2=42.093 P<0.001*	
*: Highly significant difference								

DISCUSSION

Probable mode of action Gandusha:

Unhealthy mouth is acidic and increases the risk of oral diseases. Gandūsha is an immediate solution for mouth acidity and change the oral pH quickly into a safe zone. The active ingredients and chemical constituents of the medicated liquid of Gandūsha regulate and balance the pH of the oral cavity and help to reduce bacterial growth in the mouth. Thus Gandūsha cures the disease and helps to regain oral hygiene by maintaining a good pH balance in the mouth

Gandūsha increases mechanical pressure inside the oral cavity. The active ingredients

and chemical constituents of the medicated liquid stimulate the chemoreceptors and mechanoreceptors in the mouth to send signals to salivary nuclei in the brain stem. As a result, the parasympathetic nervous system activity increases and impulses sent via motor fibres in facial and glossopharyngeal nerves. They trigger a dramatically increased output of salivary secretion which predominantly watery (serous). The metabolic waste (toxins), food debris and depositions as well as superficial infective micro-organisms present in the oral cavity gets dislodged and mixed with retained medicated liquid and removed from the oral cavity. Thus, Gandūsha will act as a good oral cleansing method and helps to improve or regain the oral hygiene.

Taila Gandusha dharana as it gives strength to jaw bone, facial muscle etc, creates pressure in the oral cavity and bringing out toxins and other debris from the inter dental, gingival, and gingival margins. Gandhusa with medicated oil helps in reduction in the specific bacteria in the mouth cavity Streptococcus mutans. These bacteria are responsible for plaque accumulation which intern results in gum recession and dentine hypersensitivity

Tilayasthimadhu ksheerapaka

- Tila, Yasthimadhu, Ksheera has madhura rasa, madhura vipaka and Balya, Brihaman guna which helps in relieving dantaharsha by alleviating vata which is the main dosha involved.
- Moreover the drug Yasthimadhu and ksheera is known as balya, Tila is dantya Combination of these gives strength to the teeth, gums and accessory structures of oral cavity.
- Tila is best among vata shamaka and its Vyavayi guna spreading throughout the body quickly, yasthimadhu is having naturally occurring steroids, it does anti-inflammatory action, Milk is a most valuable food for the formation of bone. Phosphorus contents of cow's milk are 100 mg/ml. Combination of all these drugs gives a layer of coating on the surface of the tooth and gingival thus protecting the dentine from exposure
- Phosphors is one of the chemical compositions of Ksheera, Potassium nitrate is used to occlude the dentine tubule, which easily pass through dentine to the pulp. They depolarize the sensory nerve endings present close to the odontoblasts, preventing the transmission of impulses to the brain, thereby reducing or relieving pain and hypersensitivity.
- Exposure of dentine leads to hypersensitivity. Tilayasthimadhu Ksheerapaka gives a layer of coating on the surface of the tooth and gingival thus protecting the dentine from exposure.
- Another chemical composition of Yasthimadhu – Phytosterol is anti-inflammatory action. It may help in reducing gingival infections, there by controlling hypersensitivity of teeth.
- The Ksheerapaka processed with medicines used for Gandusha helps in dilation of the blood vessels in the oral mucosa (gingiva) and thus helps in absorption of the active ingredients present in medicine, which in turn gives strength to the roots of the teeth.

CONCLUSION

- Dantaharsha can be corelated with Dentine hypersensitivity. This is characterized by pain, hypersensitivity to cold, hot, sour substances.
- Gandūsha is the form of drug administration into the oral cavity in which the active ingredients and chemical constituents of the drugs are absorbed through the buccal mucosa and reach the blood stream. It is having both in local and systemic action but generally more in local effect
- The drug Yasthimadhu and ksheera is knownas balya, Tila is dantya Combination of these gives strength to the teeth, gums and accessory structures of oral cavity.
- Tila is best among vata shamaka and its Vyavayi guna spreading throughout the

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Declaration by Authors

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