

COMPARATIVE STUDY OF KHADIRA KASTHA CHURNA AND MADHUKA KASTHA CHURNA FOR DANTADHAVAN UPAKRAMA IN MAINTAINANCE OF ORAL HYGIENE

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ABSTRACT

In modern life, due to lack of time and negligence; people tend to neglect the maintenance of Oral hygiene leading to oral hygiene problems. Dantadhavana Upakrama (brushing of teeth's) mentioned in Dincharya procedures of Ayurvedic science has important role to play in these situations. Dantadhavana prevent individuals from Mukhdaurgandhya (bad odour), Mukhasyavairasya (improper taste perception), Dantamala (debris), Dantamalinta (plaque) etc. thereby improving the overall all hygiene of oral cavity. Ayurveda emphasizes on use of variety of drugs for the purpose of Dantadhavana. Present study aimed at comparing Khadira kastha churna and Madhuka kastha churna for Dantadhavana Upakrama in maintenance of oral hygiene. The study was randomized control clinical trial on 60 individuals between the age group 20-50 years of both the sex divided into two groups i.e. group A- 30 individuals were given Khadira (Acacia

catechu) Kastha churna and in group B-30 individuals were given Madhuka (madhuca indica) Kastha Churna for Dantadhavana & periodic follow-ups were noted. Khadira kastha churna showed better results in Mukhdaurgandhya (bad odour), Dantamala (debris), Dantamalinta (plaque) and after taste. This may be due to tikta kashaya rasa of khadira and also due to the proven activity of khadira i.e. antimicrobial, antifungal, anti-inflammatory, and antibacterial.

Madhuka kasha churna showed better results in improvement in the symptoms of Mukhasyavairasya (improper taste perception) as compare to khadira kasha churna which may be due to madhura, kashaya rasa and madhura vipaka of madhuka. Dantadhavana is one of the important procedures of Dinacharya mentioned in Ayurveda for the maintenance of the health of oral cavity.

KEYWORDS: Dantadhavana, Khadira kasha churna, madhuka kasha churna, oral hygiene

INTRODUCTION

Maintaining good oral hygiene is the most important things which includes optimum health of teeth's and gums. Healthy teeth enables an individual to look and feel good, helps in normal digestion of food. Good oral hygiene is one of the essential characteristics of overall well-being. Daily preventive care of oral cavity, including proper brushing helps control the ailments of oral cavity before they develop.

According to a 2012 World Health Organization fact sheet on oral health, "Oral health is essential to general health and quality of life. It is a state of being free from mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal (gum) disease, tooth decay, tooth loss, and other diseases and disorders that limit an individual's capacity in biting, chewing, smiling, speaking, and psychosocial wellbeing."^[1]

The Global Burden of Disease Study found that prevalence of oral diseases was about 3.9 billion people affected worldwide.^[2] Dental caries in permanent teeth was found to be the most prevalent condition (affecting 35% of population), whereas severe periodontitis, caries in deciduous teeth, tooth loss were the 6th, 10th and 36th most prevalent global conditions, respectively.^[2] According to the National Oral Health Survey of India (2002-03), prevalence of periodontal diseases was 57.0%, 67.7%, 89.6% and 79.9% in the age groups 12, 15, 35-44 and 65-74 years, respectively.^[3] The age standardized incidence of oral cancer in India is 12.6 per 100,000 population. In the age range of 65-74 years, 19% in India are toothless.^[4]

Findings from dentist's survey reports; 87% of the dentists said that oral hygiene problems are common among Indians. 83% of the dentists agree that in India, people immediately visit their doctor if affected by cold, fever, body ache / stomach ache but not for tooth ache. 87% of the dentists said that patients have no dental hygiene routine prior to their first visit to a dentist. 72% of the dentists said that people come for a check up on oral hygiene after

embarrassing gossip by colleagues. 92% of the dentists said that it is important to brush for at least 2 minutes twice a day and visit a dentist every 6 months for optimum oral health. (Ref: IMRB journal, March 2013).

Mukha (oral cavity) is one of the main nine orifices of our body according to Ayurveda. It is the beginning of gastrointestinal system of our body. Mukha swasthya (oral hygiene) is very essential to remain healthy, because many of the infections start from the Mukha. Teeth are the important part of oral cavity that is why 'Danta swasthya' i.e. hygiene of teeth is very essential for 'Mukha swasthya'. Hence, Dantadhavana Upakrama mentioned in Dincharya (daily regimen) of Ayurveda can play an important role in maintenance of oral hygiene. Various drugs have been enlisted for Dantadhavana in Ayurvedic classics which are katu (pungent), tikta (bitter) & Kashaya (Astringent) rasa pradhana. Acharya Sushruta explains additionally madhura rasa pradhana dravya i.e Madhuka for Dantadhavana. Further Acharya Sushruta states that nimba (*Azadirachta indica*) is best among tikta rasa, Khadira (*Acacia catechu*) best among kashaya rasa, madhuka is best among madhura (*Madhuca longifolia*) rasa and karanja (*Millettia pinnata*) is best among katu rasa⁵. Hence present study highlights the comparative effect of Khadira katha Churna and madhuka katha Churna for Dantadhavana Upakrama in maintenance of oral hygiene.

AIM

Compare efficacy of Khadira katha Churna (best in Kashaya rasa) and Madhuka katha Churna (best in Madhura rasa) for Dantadhavana Upakrama in maintenance of oral hygiene

METHODOLOGY

A clinical study was conducted on total 60 individual, divided into two groups of 30 individuals each between the age group of 20-50 years of both the sex, fulfilling the selection criteria. Group A consisted of individuals following Dantadhavana with Khadira Katha Churna, Group B - Dantadhavana with Madhuka Katha Churna. Subjects enrolled after duly acceptance of consent for the study were advised to follow Dantadhavana procedure as per Ayurvedic classics for 30 days twice (morning & evening-before bed) and follow up of study was recorded periodically with post treatment follow up on 45th day from commencing of study.

Selection Criteria

Individuals between the age group of 20-50 years of either sex with lakshanas of Mukhdaurgandhya (bad odour), Mukhasyavairasya (improper taste perception), Dantamala (debris), and Dantamalinta (plaque) were included.

Exclusion criteria

Patients suffering from stomatitis, oral cancer and major oral diseases, accidental dental injuries were excluded. Similarly patients with mouth ulcer, oral cancer, ulcerative squamous cell carcinoma, bleeding disorders of gums & teeth, and tooth abscess were excluded. The patients undergoing any orthodontic treatment and suffering from any systemic disease were excluded.

Assessment Criteria**1. Dantamalinta (plaque)**

Grade - 0 No plaque

Grade - 1 A film of plaque adhering to the free gingival margin and adjacent area of the tooth. The plaque may be seen in situ only after application of disclosing solution or by using the probe on the tooth surface

Grade – 2 Moderate accumulations of soft deposits within gingival pockets seen by naked eyes.

Grade – 3 Abundance of soft matter within the gingival pocket and/or on the tooth and gingival margin.

2. Mukhadauryagandha (freshness of mouth)

Grade - 0 No odour present

Grade – 1 Rarely noticeable odour

Grade - 2 Clearly noticeable odour.

Grade – 3 Strong offensive odour.

3. Dantamala (debris)

Grade – 0 No debris or stain present.

Grade – 1 Soft debris covering not more than one third of the tooth surface, or presence of extrinsic stains without other debris regardless of surface area covered.

Grade – 2 Soft debris covering more than one third, but not more than two thirds, of the exposed tooth surface.

Grade – 3 Soft debris covering more than two thirds of the exposed tooth surface.

4. *Asyavairasya* (improper taste perception)

Grade – 0 Proper taste perception, enjoys taste of the food

Grade – 1 Often complains regarding the taste of food

Grade – 2 Shows disinterest towards food

Grade – 3 Often skips meal

5. Oral hygiene index

OHI-S = Debris index score +calculus index score.

Grade – 0 0.1 - 1.2 score

Grade – 1 1.3 - 3.0 score

Grade – 2 3.1 - 6.0 score

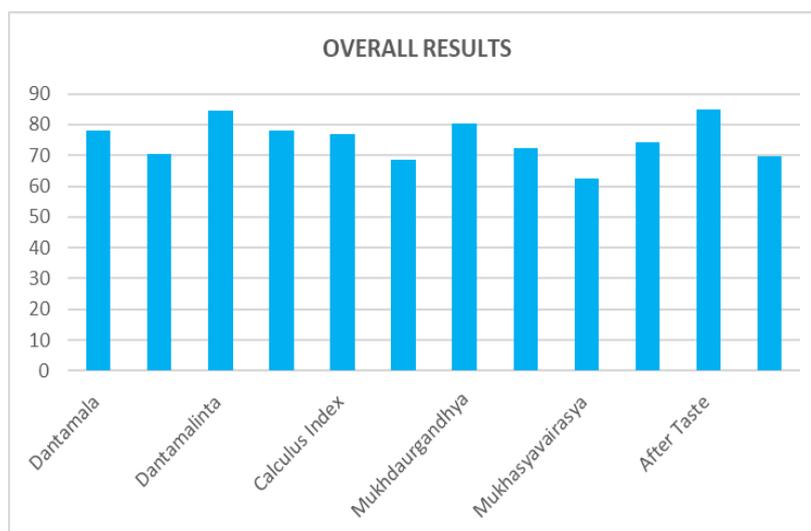
RESULTS

In the present study maximum number of cases i.e. 31(51.66%) were observed between the age group of 40-50 years. Out of 60 individuals included in the study, 20 (33.33%) had habit of pan chewing, 12 (20%) were having habit of tobacco chewing. Based on the frequency of brushing teeth, out of 60 individuals selected 44 (73.3%) individuals were once cleaning & 16 (26.7%) individuals were twice brushing teeth.

Based on the assessment criteria opted for the present study, for Dantamala in Group A showed 78.2% relief and Group B has shown 70.3% relief. For the symptom of Mukhdaurgandhata, Group A has shown 80.2% relief and Group B has shown 72.3% relief. Group A showed 84.7% relief and Group B has shown 78.0% relief in the symptom of Dantamalinta. Results for *Asyavairasya* showed 62.6% relief in Group A whereas 74.1% relief in Group B. In Calculus Index, Group A showed 76.8% improvement and Group B showed 68.4% improvement. Under the Oral hygiene index score Group A had 72.29% improvement and Group B had 67.28% improvement. While comparing the results of both the groups, Khadira kashtra Churna and Madhuka kashtra Churna showed significant results, but Khadira kashtra Churna showed better result as compared to Madhuka Kashtra Churna for Dantadhavana. Khadira kashtra Churna showed better results in Mukhdaurgandhya (bad odour), Dantamala (debris), Dantamalinta (plaque) and after taste, whereas Madhuka Kashtra Churna showed better results in Mukhasyavairasya (improper taste perception).

Table Showing Overall Results.

Parameters	Group	N	% of relief	Mann Whitney U	P-Value
Dantamala	Group A	30	78.2	147.000	0.000
	Group B	30	70.3		
Dantamalinta	Group A	30	84.7	156.000	0.000
	Group B	30	78.0		
Calculus Index	Group A	30	76.8	10.500	0.000
	Group B	30	68.4		
Mukhdaurgandhya	Group A	30	80.2	44.000	0.000
	Group B	30	72.3		
Mukhasyavairasya	Group A	30	62.6	105.000	0.000
	Group B	30	74.1		
After Taste	Group A	30	85.0	160.000	0.002
	Group B	30	69.8		



DISCUSSION

Khadira katha Churna and Madhuka katha Churna showed significant results, but Khadira katha Churna had better result as compared to Madhuka Katha Churna for Dantadhavana because Khadira (*Acacia catechu*) has Kashaya, tikta rasa, katu vipaka and kaphanashana properties and also the antibacterial, antifungal, anti-inflammatory antioxidant activity probably helped in relieving the symptoms and thereby maintaining the oral hygiene. Madhuka (*Madhuka indica*) has madhura, kashaya rasa, madhura vipaka and kaphanissaraka karma and proven antimicrobial, antiulcer, antifungal activities which were beneficial in reducing the symptom of improper taste perception. Rubbing of Churna with help of finger on teeth may also have helped in Chhedan (scrubbing) of Kapha. Khadira katha Churna showed better results in Mukhdaurgandhya (bad odour), Dantamala (debris), Dantamalinta (plaque) and after taste which might be due to tikta, Kashaya rasa of Khadira and also due to

the proven activity of Khadira i.e. antimicrobial, antifungal, anti-inflammatory, and antibacterial. Madhuka Kasta Churna showed better results in Mukhasyavairasya which may be due to the madhura rasa madhura vipaka of Madhuka and antibacterial, activity of Madhuka.

CONCLUSION

Dantadhavana is one of the important procedures of Dinacharya for maintaining the health of oral cavity highlighted in Ayurvedic science. Dantadhavana Upakrama helps strengthen the gingiva, tooth and other structures in the oral cavity. Various dravya's have been indicated for the purpose of Dantadhavana in classics having katu, tikta and kashaya rasa predominance, whereas Sushruta Acharya has additionally indicated madhura rasa pradhanya dravya i.e. Madhuka for Dantadhavana. Khadira kasta churna and madhuka kasta churna showed significant results but comparatively Khadira kasta churna showed better results as compared to Madhuka kasta churna. Khadira kasta churna showed better results in Dantamala Dantamalinta Mukhadaurgandya and after taste due to tikta, kashaya rasa of khadira whereas Madhuka Kasta churna showed better results in Mukhasyavairasya which may due to Madhura rasa & Madhura vipaka of Madhuka. Daily practice of Dantadhavana procedure of Dinacharya definitely helps in improving the overall hygienic condition of oral cavity thereby preventing the disease of oral cavity & maintaining the oral hygiene.

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