Original Research Paper

Ayurveda

CLINICAL STUDY OF KARANJA CHURNA FOR DANTADHAVANA

Dr Vikrant Pawar*	HOD & Associate Professor, Swasthavritta Dept. Bhimashankar Ayurved College, Maharashtra University of Health Sciences , Nashik., Maharashtra. *Corresponding Author
Dr Amol Waghmare	HOD & Professor, Rasashashtra Dept., Bhimashankar Ayurved College, Maharashtra University of Health Sciences , Nashik, Maharashtra.
Dr Satish Chapadgaonkar	HOD & Professor, Bhimashankar Ayurved College, Maharashtra University of Health Sciences, Nashik, Maharashtra.

ABSTRACT Dantadhavana is important procedures of dinacharya for maintaining health of oral cavity. Karanja has krimighna action. It reduces dantamala,dantamalinata,asyavairasya mukhadaurgandh. As karanja having katu, tikta rasa, tiksha, ushna guna it is effective in improving oral hygiene. And dantadhavana upkrama has significant importance in maintenance of oral hygiene. Clinical study conducted of karanja churna (*pongamia pinnata linn*.) For dantadhavana .Clinical study conducted on 30 individuals for period of 45 days. These individuals divided in 2 groups 3 observations taken by after 15 days for each Thus from observed data and discussion katu rasa pradhan karanja is highly significant in various oro-dental problems and it increases taste recognizing power. More effective in maintaining healthy dental as well as total overall hygiene,

KEYWORDS : dantadhavana, karanja, oral hygiene.

INTRODUCTION
Ayurveda is science of life ensuring a healthy mind and healthy body. Ayurveda aims to the preservation of health and cure of illness. Ayurveda believes in strong physique, quiet mind and kind heart so that person feels healthy and happy for himself [sukhayu] and purposeful for the society [hitayu] nation, and world .The aim of ayurveda is progression of social health of human beings is very essential than diagnosis or management of any diseases .That's why alternative ideas and methods to provide health care have been considered and tried. The existing gross inequality in the health status of people socially and economically is unacceptable". As mukha is one of the main nine openings of our body. Mukha swasthya is very essential to remain healthy, because many of the infections start from the mukha.Nowday's people are suffering from dental diseases because of lack of knowledge of "Dantaswasthya". Today dental plaque, tarter, calculusare common problems. "Danta swasthya" in this view playing an important role for the prevention of diseases. In ayurveda many drugs essential for Dantadhavan are stated. Katu rasa pradhana "*karanja*"is advised for Dantadhavana in ayurvedic samhitas.[1,2,3]

The churna of the kashtha of *karanja* (taken in the same quantity) can play important role in the prevention of mukhaagata and dantagata malas. In samhita granthas, acharya susruta mainly describes about dantamulagata and dantagata rogas, mainly because of poor oral hygiene and improper brushing.As "karanja" is having katu rasa, which stated as "krimighna" in our samhitas, can shows good effect on mukha daurgandhya and other dental problems. [4,5,6] This study planned to evaluate the effect of churna of karanja[9,10]

MATERIALS & METHODS
SELECTION OF DRUG
Identification, authentification and standardization of *karanja* kashtha churna (pongamiapinnata linn) done.

Karanja churna prepared from dry *karanja* kastha. And used in dry form.

SELECTION OF UPAKRAMA [2,3,4]
Upakrama – dantadhavana
Time –in morning & at night (after meal)

Quantity-   1.5 -2 grams
Duration-   3-5 min.
Form-   churna

Process:- Brush teeth properly with help of fingers or tooth brush.

Ayurveda -Adhodantpurvakam -meaning lower teeth should be brushed and then upper teeth.

TYPE OF STUDY
Clinical study - Clinical trials carried out on **30** healthy individuals. Divided in to 2groups

Group a: treatment group = **15** individuals - karanj churna for dantadhavana

Group b: control group = **15** individuals – colgate powder for dantadhavana.

Follow up individuals from both groups were examined 3 times after every 15 days.

INCLUSION CRITERIA
Individuals between age group of 20-50 yrs
Individuals of both sex

Individuals having lakshanas asyavairasya , dantamalinata , mukhadaurgandha & Dantamala.

EXCLUSION CRITERIA
Individuals contra indicated for Dantadhavana was excluded.

Individuals suffering from oral diseases were excluded.

CRITERIA OF ASSESSMENT [19,20]
Reversible index -Indices used to measure changing condition that may heal or progress with time.

I.dantamala - debris index
Ii. Dantamalinata -plaque index (sillness & loe)
Iii. Mukhaswasthya-oral hygiene index(greene & vermillion)
Iv. Calculus index

Selection of teeth and surfaces

1. Divide dentition into segment
A. Anterior canine to canine
B. Posterior segment begins distal to second premolar

Score only 1 st fully erupted permanent teeth distal to premolar in each posterior segment and maxillary right and right mandibular left central incisor facial surfaces of maxillary right and mandibular left central incisors are used when either is missing then opposite central incisor is scored. Index teeth

6	1	6
6	1	6
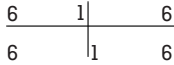
Ttooth is considersd fully erupted as reached occlusal plane Third molar are included when it reached occlusal planes fully-erupted and functional.

Exclusion
1. Third molar
2. Teeth with full crown restorations
3. Tooth reduced in height because of dental caries or trauma.

Tooth surfaces lingual surfaces of 36,46and buccal surfaces of16,26 and labial surface of 11,31

DANTAMALA - DEBRIS INDEX SIMPLIFIED S
Dental explorer is placed on incisor third of tooth and moved towards gingival third .according to criteria given below.

Scoring criteria for oral debris (di-s)
Gr. 0 =no debris.
Gr. 1 =debris covering not > 1/3 of tooth surface/ presence of extrinsic stains without other debris regardless of surface area covered.
Gr.2 = debris covering > 1/3 but not > 2/3 of exposed tooth surface.
Gr.3=debris covering > 2/3 of the exposed tooth surface.

$$\text{Debris index} = \frac{\text{Total score}}{\text{No. Of teeth (6) examined.}}$$

DANTAMALINATA   -   PLAQUE INDEX [12,13]
Method- (sillness & loe)
Plaque was assessed on facia, distal and lingual surfaces of all of teeth using a disclosing agent and dental mirror.

Scoring criteria for plaque index:
Gr.0 = (0) = no plaque
Gr.1 = (0.1-0.9) = thin plaque adhered to free gingival margin.
Gr.2 = (1.0-1.9) = moderate deposit of soft deposits within gingival pockets seen by naked eyes.
Gr.3 = (2.0-3.0)= abundance of soft matter within gingival pockets on tooth & gingival margin.

Plaque index =

$$\frac{\text{TOTAL SCORE}}{\text{NO. OF SURFACES EXAMINED}}$$
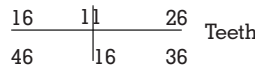
MUKHASWASTHYA
Green and vermillion oral hygiene index-simplified (OHI-S)
This OHI_S consist of simplified debris index (di-s) and simplified calculus index (ci-s).

Methodology
Only mouth mirror and shepherd crook or sickle-type dental explorer are used for examination. The six tooth surfaces examined in OHI-S are.

16	11	26	Teeth
46	16	36	

1) If any of these teeth is missing adjoining distal tooth is examined
2) The buccal surfaces of upper molars, lingual surfaces of lower molars and labial surfaces of upper and lower incisors examined.

DANT SHARKARA - CALCULUS INDEX
The (ci-s) assessment is performed by placing dental explorer into distal gingival crevice and drawing it sub gingival from distal contact area to mesial contact area

Scoring criteria for calculus (ci-s)
Gr.0 = no calculus
Gr.1 = supra gingival calculus covering > 1/3 of exposed tooth surface
Gr.2 = supra gingival calculus covering > 1/3 but not >2/3 of exposed tooth surface /presence of individual flecks of sub gingival calculus around cervical portion of tooth / both.
Gr.3 = supra gingival calculus covering > 2/3 of exposed tooth surface /continuous heavy band of subgingival calculus around cervical portion of tooth o/ both.

$$\text{Calculus index} = \frac{\text{Total score per tooth surface}}{\text{No. Of surface examined}}$$

MUKHADAURGANDHYA
It is assessed as malaodor.

Scoring criteria for mukhadaurgandhya -Odor
Gr.0 =   no Gr 1 =   barely noticeable
Gr.2 =   clearly noticeableGr.3 =   strong offensive.

ASYAVAIRASYA
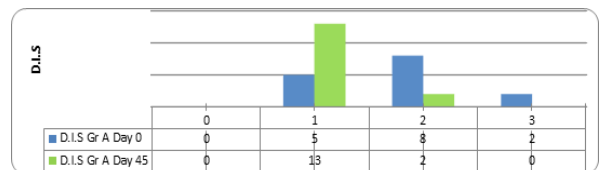It is a subjective criteria assessed as after taste.

Scoring criteria for asyavairasya
Gr.0 = normal tasteGr.1 = feeling of abnormal sensation of taste for 1hr.

Gr.2 =   feeling of abnormal sensation of taste for >1hr
Gr.3 = feeling of abnormal sensation of taste for 1 whole day.
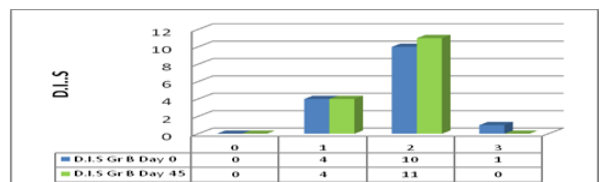
DANTAMALA - DEBRIS INDEX SIMPLIFIED

	Mean(B.T.)	Mean (B.T.)	S. D.	T value	P value
Group a	1.8000	1.1333	0.5473	4.5571	0.000224
Group b	1.8000	1.2666	0.5531	3.6076	0.001428

Group A

	0	1	2	3
D.I.S Gr A Day 0	0	5	8	2
D.I.S Gr A Day 45	0	13	2	0

Group B

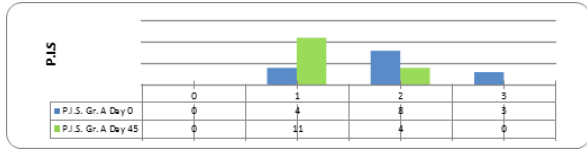|	0	1	2	3
D.I.S Gr B Day 0	0	4	10	1
D.I.S Gr B Day 45	0	4	11	0

Significant changes   in both   Groups.Mean B.T. in-groupA was 1.80 reduced to 1.13 In-GroupB mean B.T. was 1.80 reduced to 1.26.

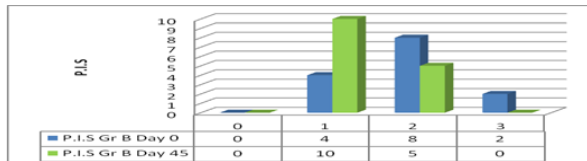## DANTAMALINATA - PLAQUE INDEX

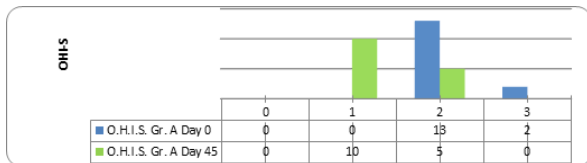|	Mean (B.T.)	Mean (A.T.)	S. D.	T value	P value
Group A	1.9333	1.3333	0.5539	4.0530	0.000593
Group B	1.8000	1.3333	0.5448	3.2045	0.013316

Group A

Group B

Significant changes seen in both groups. Mean B. T. in GroupA was 1.93 reduced to 1.33 GroupB mean B.T. was1.80 reduced to 1.33
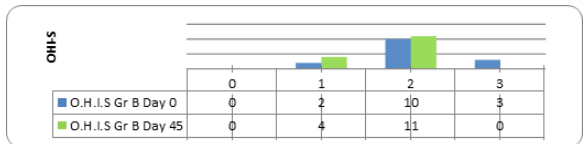
MUKHASWASTHYA
Green and vermillion oral hygiene index-simplified (OHI-S)

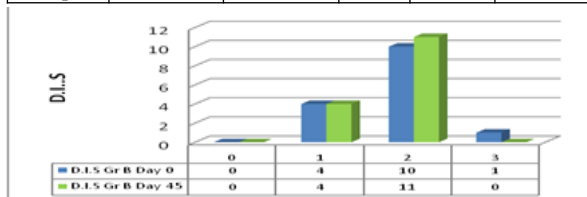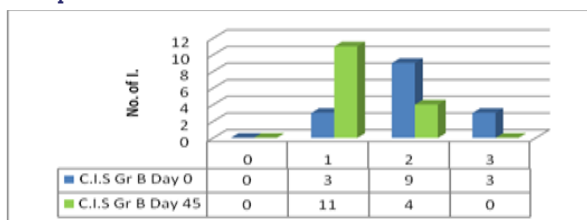|	Mean (B.T.)	Mean (A.T.)	S. D.	T value	P value
Group A	2.1333	1.1333	0.5097	5.8726	00
Group B	2.0000	1.7333	0.5035	2.4768	00

Group A

Group B

There were significant changes seen in both the groups. Mean B. T. in group a was reduced   to 1.13 where as in group b mean B.T. was 2.00 which was reduced to 1.73
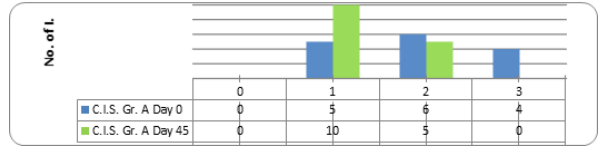
DANTSHARKARA -CALCULUS INDEX

	Mean(B.T.)	Mean(A.T.)	S. D.	T value	P value
Group A	1.9333	1.3333	0.5539	4.0530	0.000224
Group B	1.8666	1.5333	0.5035	2.4768	0.003182

Group A

Group B

Significant changes in both the groups. Mean B.T. in GroupA 1.93 reduce to 1.33 GroupB mean B.T. was 1.86 reduced to 1.53
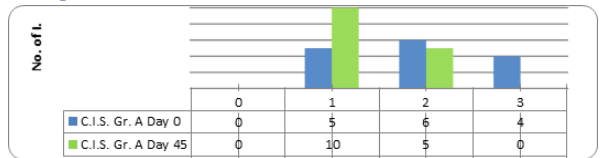
MUKHADAURGANDHYA

	Mean(B.T.)	Mean(A.T.)	S. D.	T value	P value
GroupA	1.8000	1.1333	0.5473	4.5571	0.000224
GroupB	1.8000	1.2666	0.5531	3.6076	0.001428

significant changes in groups. Mean B.T. in GroupA was 1.80 reduced 1.13 Group B mean B.T. was 1.80 reduced to 1.26
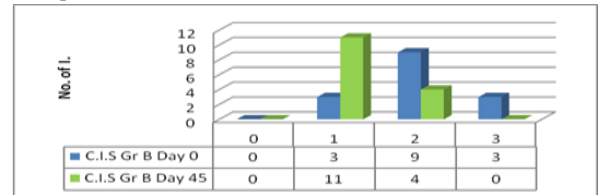
ASYAVAIRASYA

	Mean (B.T.)	Mean (A.T.)	S. D.	T value	P value
Group A	1.9333	1.3333	0.5539	4.0530	0.000224
Group B	1.8666	1.5333	0.5035	2.4768	0.003182

Group A

Group B

Significant changes in both groups. Mean B.T. in GroupA was 1.93 reduced to 1.33 Group B mean B.T. was 1.86 reduced 1.53

DISCUSSION
From Observed Data of Both Groups:-

- **DANTAMALINATA**(plaque index).karnja churna is equally significant to that of colgate powder in reducing dental plaque. karanja having krimighna & tiksna properties helped in reducing dental plaque .
- **DANTA SHARKARA** (calculus index). karnja churna had equal significance to that of colgate powder in reducing dental calculus. Since karanja having katu & tikta rasa, tikshna guna and kapha samshanana karma it reduces dental calculus –dantasharkara.
- **DANTMALA** - karnja churna is more significant than colgate power in reducing food debris. Karanja having katu,tikta rasas and ushna ,tikshna gunas reduces food debris. Katu & tikta rasa helps in pacifying kapha dosha while ushna & tikshna guna help in pacifying vata dosha. Procedure of brushing helped in removing food debris stuck in teeth.
- **MUKHASWASTHYA** -[OHI-S] Index -.karnja churna is equally significant to that of colgate powder maintaining oral hygeiene. More effective in maintaining healthy dental hygiene.As karanja having katu, tikta rasa, tiksha, ushna guna is effective in improving oral hygiene. And dantadhavana upkrama has significant importance in maintenance of oral hygiene
- **MUKHADAURGANDHYA**- there is no doubt that karnja churna   given is more significant than colgate power in reducing mukhadugandhya .The katu & tikta rasa helps in pacifying the kapha dosha while ushna & tikshna guna help in pacifying vata dosha. The procedure of brushing helped in removing the food debris stuck in the teeth.

hence reduces mukhadaurgandhya

• **ASYAVAIRASYA** - karnja churna given is slightly more significant to that of colgate power in reducing asyvairasya. The drug (karnja churna) had equal significance to that of colgate powder in reducing asyavairasya. Since karanja having katu & tikta rasa, tikshna guna and kapha samshanana karma reduces asyavairasya. Dantdhavan with karaanjakashtha churna can use existing resource with maximum efficacy. From economical puspective karaj churna is better option.

CONCLUSION

• Dantadhavana is one of the important procedures of Dinacharya.For maintaining the health of oral cavity. Karanja has krimighna action. It reduces Dantamala , Dantamalinata , Asyavairasya ,mukhadaurgandha. From above observed data and discussion katu rasa pradhan karanja is highly significant in various oro-dental problems and it increases taste recognizing power. Dantadhavana with Karanja is more effective in maintaining healthy oral hygiene, thus is prevents various problems. As karanja having katu, tikta rasa, tiksha, ushna guna it is effective in improving oral hygiene. And Dantadhavana upkrama has significant importance in maintenance of oral hygiene. The effect of karanja for dantadhavan totally act on oral cavity i.e. Gums, teeth etc.

REFERENCES
1. Shri. Satyanarayana shashtri, " Charak samhita: part i & ii" , reprint 2003, caukhambabbharati academy, varanasi.
2. Shri ambikadatta , Shashtri , "Shushrut samhita: part i & ii", 17th edition 2003, caukhamba sanskrit sansthana, varanasi.
3. K.R. Shrikantmurthy, "Astang sangraha: part i & ii" , translation1st edition 1995 caukhamba orientalia,
4. Dr Ganesh Krishna Gadre , "Sartha vagbhata" : 8 edition raghuvanshi prakashan, pune.
5. Vaidya Shri Laxmipathi shashtri , " Yogratnakar" :7th edition, 1999. chaukhamba sanskrit sansasthana, varanasi,
6. Vaidya P.G.Athawale, "Drustartha madhavnidan with madhukosha tika : part i & ii" by, 1st edition, 1992, by drushtartha mala prakashan.
7. Vaidya Dattatraya shashtri Jalukar , "Ayurvediya swasthavrutta" , 1991 by maharashtra granthanirmiti mandal.
8. M.S Bghel, "Research in ayurveda by m.s.baghel", 2nd edition, by ayurvedic publications and sales, varanasi, 2005.
9. Vaidya Gadgil , "Laxana kosh" , 1st edition, tilak maharashratra vidyapeeth, pune, jan 2002,
10. Vaidya Gadgil "Hetu kosh part 1 & 2",1st edition, tilak maharashratra vidyapeeth, pune, march 2004.
11. K.Park, "Preventive & social medicine", 17th edition, nov, 2002.
12. Satish & Shaleen Chandra , "Textbook of community dentistry", jaypee publ2002.
13. Satish & Shaleen Chandra ,"Textbook of preventive dentistry" , jaypee publ.1999.
14. Jayprakash K. ,"Short textbook of community and preventive dentistry" ,jaypee .publ2004.
15. Gurumukh Sainani " Api textbook of medicine", 15th edition, 1992.
16. Best & Kahn ,"Research in education" , 7th edition, 2000.
17. Burkill, j.h. 1966. A dictionary of economic products of the malay peninsula. Art printing works, kuala lumpur. 2 vols.
18. Chaurasia, s.c. And jain, p.c. 1978. Antibacterial activity of essential oils of four medicinal plants. Indian j. Hosp. Pharm. 15(6):166–168
19. C.s.i.r. (council of scientific and industrial research). 1948–1976. The wealth of india. 11 vols. New delhi.