



Research Article

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ROLE OF JEERAK CHURNA IN MANAGEMENT OF MANDAGNI IN DIFFERENT DEHA PRAKRITI

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ABSTRACT

The substance which converts ahara (food) into body components is called Agni. Entire body strength, its fighting capacity in adverse conditions and many physiological conditions depend on the status of Agni. Prakriti is the nature of an individual. According to the Acharya Charaka state of Agni is influenced by the prakriti of individuals. Day by day, the number of mandagni subjects is increasing due to improper dietary habits, excessive competitive pressure, etc. mandagni is that which can't digest even little quantity of food in a scheduled time, produces heaviness in the abdomen and head, pain all over the body, vomiting, etc. According to Ayurveda, mandagni is the root cause of all diseases. Mandagni can be treated by using substances with the same property as Agni. According to Ayurveda, Jeerak (*Cuminum cyminum*) has katu rasa (taste), katu vipak (post-digestive effect of any ingested substances), ushna guna (quality), deepan (appetizer) and pachan (digestives) karmas (functions) resembling Agni. Aim – To study the effect of Jeerak churna (refined powder) on mandagni in different dehaprakriti. It is an open, randomized, prospective clinical study conducted during 2014-2017. As per inclusion criteria, 90 subjects of mandagni are divided into three groups: vatapradhan, pittapradhan and kaphapradhan (pradhan – dominance of that dosha) prakriti. Then Agni Bala Index (tool for assessment of Agni) of the subject assessed before. The conclusion is that the agnivardhak (increase digestive power) effect of Jeerak churna is dependent on deha prakriti, and it shows the highest agnivardhak effect in pittapradhan prakriti subjects.

Keywords: Agni, Mandagni, Prakriti, Jeerak, Agni Bala Index, Abhyavahran shakti, Jarana shakti

INTRODUCTION

A healthy person has an equilibrium of three doshas, normal Agni, normal condition of dhatu and excretory processes, prasanna atma, indriya and mana¹. Agni is an essential factor, as suggested by Ayurvedic compendia. The maintenance of human life is dependent on the normal state of Agni. It attributes to the colour of skin, strength, health, enthusiasm, growth and development of the body, etc., depending on the normal state of Agni. The abnormal state of Agni contributes to pathological changes, and the absence of Agni results in the death of the living being².

In Ayurveda, about thirteen types of Agni has described, i.e. Jatharagni, five kinds of Bhutagni and seven types of Dhatavagni. Among all these types of Agni, Jatharagni has been considered to be of prime importance³. The functioning of other Agni's, i.e. Dhatvagni and Bhutagni, depends on the strength of Jatharagni. Therefore efforts should make to maintain the integrity of Jatharagni.

Jatharagni is divided into four types, i.e. samagni, which is prakruta (normal) Agni, and the remaining three mandagni, vishamagni, and tikshnagni are vikruta (abnormal) Agni and leads to the production of various diseases. According to the Acharya Charaka state of Agni is influenced by the prakriti of individuals, so that vata prakriti subjects will have vishamagni, pitta prakriti subjects will have tikshnagni, kapha prakriti subjects will have mandagni and samagni is present due to the samadoshavastha of individuals. The number of diseases produced by the mandagni is more than those produced by the other two types of Agni⁴. Hence a categorical statement is that 'mandagni is the root cause of all diseases'.

According to Ayurveda, Jeerak having katu rasa, ushna veerya, katu vipaka, laghu guna and deepan, pachan karmas resembling Agni, and it is used to assess its effects on mandagni in different dehaprakriti⁵.

Agni Bala Index has been taken to assess and evaluate the effects of Jeerak churna on mandagni in different deha prakriti. The institute designed the concept of the Agni Bala Index for postgraduate teaching and research in Ayurveda; Gujarat Ayurved University Jamnagar the 'Developing guidelines for clinical research methodology in Ayurveda' and used earlier to assess the effect of snehapana on Agni and said that could be used for the agnibala parikshana⁶. Agnibala term is formed by two words, i.e. Agni and bala. It indicates the power of Jatharagni. It is calculated with the help of Abhyavaharana shakti and Jarana shakti.

The entity Agni can't be observed directly, so Acharya Charaka has suggested that it can be examined with the help of anuman pama by jaranashakti⁷. Jaran shakti means the power of digestion by which the maximum amount of food is consumed. Abhyavahran shakti implies the capacity for ingestion of food. The quantity of ingestion of food is directly proportional to the agnibala. Agnibala parikshana is essential in diseased and healthy persons because Agni get altered due to factors like age, climate.

As we know, the Agni is the body's primary and most crucial component and is essential for maintaining the healthy state of individuals. So the assessment of Agni is vital, it was done with the help of the Agni Bala Index, and an attempt is made to evaluate the effect of Jeeraka churna on mandagni in different deha prakriti.

Aim: To study the effect of Jeerak churna on mandagni in different deha prakriti.

Objectives

1. To evaluate the effect of Jeerak churna on Abhyavaharan shakti
2. To evaluate the effect of Jeerak churna on Jaran shakti

MATERIALS AND METHODS

Type of Study: Open, Randomized, Prospective, Clinical Study.

Study Centre: O.P.D. and department of Kriya Sharir, R.A. Podar Ayurved Medical College, Worli, Mumbai, Maharashtra, India.

Ethical Clearance: The study is carried out as per ICMR National Ethical Guidelines for Biomedical and Health Research Involving Human Participants. Clearance from the Institutional ethical committee was taken. Reference no. 1343, dated-17/03/2015. Informed written consent was taken from all the subjects included in this study.

Number of Subjects: 90

Selection Criteria

Inclusion criteria

1. Age group: Age between 16 to 40 years.
2. Sex: Male and Female
3. Subjects ready to abide by the trial procedures to give informed consent.
4. Subjects having mandagni of different deha prakriti were selected.
5. Number of subjects included in this study was 90.

Exclusion criteria

1. Age group: Age below 16 and above 40 years
2. Pregnant and lactating females were excluded.
3. They were excluded if the subject was suffering from any major illness like hypertension, jaundice, rajyakshma, prameha or other systemic disorder.

Withdrawal criteria

1. If the researcher feels that the protocol has been violated or subjects become non-cooperative.
2. Subject is not willing to continue the trial.
3. Occurrence of unexpected harmful effects regarding given drug administration and other than it.

Trial Drug

Drug: Jeerak

Kalpana: Churna

Method of preparation: Jeerak churna is prepared according to churna nirman vidhi as described in Sharangdhara Samhita. Seeds of Jeerak are dried, and its fine powder is prepared and passed through sieve number eighty-five to prepare a fine powder as per API⁸.

Matra: 5 gm/day (in divided dose, twice a day)

Anupana: Ushanodaka (hot water)

Kalawadhi: 30 days

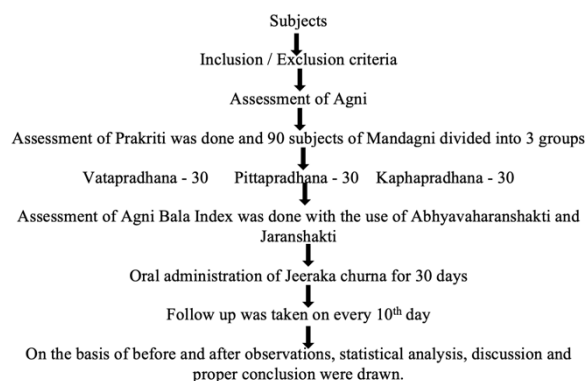
Sevankala: Sagra⁹

Oral drug administration: Oral ingestion is the oldest and most familiar mode of drug administration. It is more convenient, safer, and painless, does not need assistance, and is cheaper.

Table 1: Analytical Report of Jeerak churna (*Cuminum Cyminum*)

Test	Specifications	Result
Appearance	Fine Powder	Fine Powder
Colour	Khaki Brown	Light Brown
Odour	Characteristic	Characteristic
Taste	Richly spicy	Characteristic
Texture	Oily	Oily
Moisture content	NMT 5%	2.03%
ASH	NMT 8%	5.86%
ASW	NLT 7%	9.10%
WSE	NLT 15%	19.02%

Plan of Study



Prakriti Parikshana: The examination of prakriti is critical. Prakriti was evaluated using proforma “Developing guidelines for clinical research methodology in Ayurveda” by the institute for postgraduate teaching and research in Ayurveda, Gujarat Ayurved University Jamnagar, comprising 23 questions.

Table 2: Assessment of Prakriti

Vatapradhan	>60% of Vatapradhan characters
Pittapradhan	>60% of Pittapradhan characters
Kaphapradhan	>60% of Kaphapradhan characters

Agni Parikshan: Agni parikshan was done using Agni Bala Index with the help of the Abhyavaharan Index (A.I.) and Jarankala (t). Abhyavaharana Index is derived from Abhyavaharana shakti parikshana and Jarankala is derived from Jarana shakti parikshana.

a) Abhyavaharanshakti Parikshan: Abhyavaharana shakti is the capacity to ingest food. The hunger or the quantity of food needed also differs from one person to another. The amount of ahara is measured with the help of a digital electric weighing machine and measuring cylinder. The total intake capacity of the subjects, i.e. Abhyavaharana shakti was scored using the following methodology according to previous work done to obtain the Abhyavaharana shakti score¹⁰.

Abhyavaharana shakti score is the total score of Ghana Aahar, Drava Aahar and water consumption, which is given below.

The score for Abhyavaharana Shakti = The score for Ghana Aahar + Score for Abhyavaharana shakti = Score for Drava Aahar + Score for water intake in a day

So, the quantification of food intake would be graded and represented in Table 3.

b) Jarana shakti Parikshana: Jarana shakti means the power of digestion and its assessment was done with the help of jirna aahar lakshana parikshana as given by Madhava Nidana. Jarankala is measured with the help of jirna aahar lakshana. The time at which five or more than five jirna aahar lakshana appeared after the aaharsevana was taken as Jarankala (t).

The proper state of digestion of ingested food was estimated with the help of jirna aahar lakshana are represented in Table 4.

Examination method: Prashna pariksha

- 1. Udgarsuddhi:** After the meal, how long does it take for you to belch clearly, without any smell?
- 2. Utsaha:** After the meal, how long does it take to feel the urge to work again?
- 3. Vegotsarga:** After the meal, how long does it take to feel the urge to go to the toilet, urine or passing of gases through the anus? In it, only the time of handling the last urge is denoted.
- 4. Lghuta:** How long does it take to feel light after the meal?
- 5. Kshudha:** After the meal, how long time does it take for you to feel like taking the next full meal?
- 6. Pipasa:** After the meal, how long does it take to feel thirsty that you must drink water?

c) Agni Bala Index: Agni Bala Index was taken as a tool for assessing Agni. The institute designs the concept of the Agni Bala Index for postgraduate teaching and research in Ayurveda, Gujarat Ayurved University Jamnagar “Developing guidelines for clinical research methodology in Ayurveda”. According to these guidelines, the measurement of the Agni Bala Index is based on Abhyavaran Index and Jarankala.

Abhyavaharana Index may be graduated as follows –
 A.I. (Abhyavaharana Index) = Test dose / Given dose
 Test dose – Before treatment, food intake capacity
 Given dose – After treatment, food intake capacity

If the A.I. is more than 1, it is pointed towards agnimandya, and if A.I. is less than 1, it shows an improvement of Abhyavaharana shakti. With the help of this Abhyavaharana shakti, one can calculate agnibala. To set the agnibala, we have to consider the

second factor, i.e. kala – the time required to digest the given dose of aahar. By multiplying the A.I. with the time (t) required for digestion, we can get Agni Bala Index (A.B.I.)

$$\text{Agni Bala Index} = \text{Test Dose} / \text{Given Dose} \times \text{time}$$

$$\text{Agni Bala Index} = \text{Abhyavaharana Index} \times \text{time.}$$

The lesser the A.B.I., the more will be the agnivridhhi.

Changes in the Agni Bala Index in each individual were recorded. (Table 6)

Statistical Analysis

To reach the final results and conclusion, the data generated during the study were subjected to statistical analysis. To determine the difference in Abhyavaharana shakti, before and after, was reduced after consumption of Jeerak churna Jeeraka churna in mandagni of different deha prakriti, ‘Wilcoxon Match Paired Signed Rank Test’ was applied as the data obtained is non-parametric. To determine the difference in Jaranakala (t) and Agni Bala Index (A.B.I., tool for assessment of Agni) of the subject, so assessment is done before and after consumption of Jeerak churna in mandagni of different deha prakriti, ‘paired t test’ was applied as data obtained is parametric. Kruskal Wallis test was applied to study the relationship between the prakriti and Abhyavaharana shakti. One Way ANOVA test was applied to evaluate the association between prakriti and jaranakala, prakriti and Agni Bala Index.

Table 3: Assessment of Abhyavaharana Shakti

Total	WHO’S Classification	
	Score	Abhyavaharana Shakti: Uttam/Madhyam/Heena
>40	0	Uttama
39-30	1	Madhyama
29-20	2	
19-10	3	
09-04	4	Heena
03	5	

Table 4: Assessment of Jirna aahar lakshana

Symptoms	Time				Symptoms are seen at a time from aharsevana				Yes / No			
	BT	1 st F/U	2 nd F/U	A T	BT	1 st F/U	2 nd F/U	AT	BT	1 st F/U	2 nd F/U	AT
Udagarshuddhi												
Utsaha												
Sharirlaghava												
Kshudha												
Trishna												
Vegotsarga												

BT-Before treatment, AT- After treatment, 1st F/U – First follow up, 2nd F/U – Second follow up.

Table 5: Assessment of Jarana shakti

Jarankala (t)	BT	1 st F/U	2 nd F/U	AT
In hours				

BT-Before treatment, AT- After treatment, 1st F/U – First follow up, 2nd F/U – Second follow up.

Table 6: Assessment of Agni

	BT	1 st F/U	2 nd F/U	AT
A.I (Abhyavaharan Index)				
Jarankala (t)				
A.B.I.= (A.I X t) (Agni Bala Index)				

BT-Before treatment, AT- After treatment, 1st F/U – First follow up, 2nd F/U – Second follow up.

Table 7: The Effect of Jeerak churna on Agni Bala Index in Different Deha prakriti

Prakriti	Agni Bala Index			
	BT	AT	Difference	%
Vata Prakriti	541	492.53	48.47	8.95
Pitta Prakriti	562.5	490.63	71.87	12.78
Kapha Prakriti	546	512.17	33.83	6.19
Total	1649.5	1495.33	154.17	9.34

BT-Before treatment, AT- After treatment

Table 8: Improvement of Agni Bala Index in different Deha prakriti

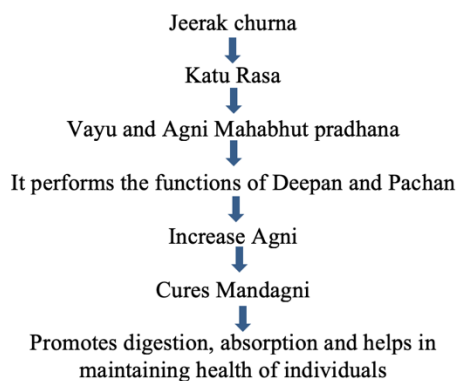
Prakriti	Agni Bala Index				
	Improved	%	Not Improved	%	Total
Vata Prakriti	25	83.33	5	16.67	30
Pitta Prakriti	27	90	3	10	30
Kapha Prakriti	22	73.33	8	26.67	30
Total	74	82.22	16	17.78	90

OBSERVATIONS AND RESULTS

From the above observations, it was found that Agni Bala Index was reduced after Jeerak churna in different deha prakriti subjects, indicating that agnivriddhi in subjects as the Agni Bala Index and Agni has an inversely proportional relation. (Table 7)

According to the Agni Bala Index, Jeerak churna increases Agni more in pittapradhan prakriti subjects than in vatapradhan prakriti and kaphapradhan prakriti subjects. (Table 8)

The probable mode of action of Jeerak churna is as follows



DISCUSSION

Agni is the fundamental concept of Ayurveda, which has been described as an essential factor of digestion and metabolism in our body. According to Ayurveda, mandagni is the root cause of all diseases, so it is vital to treat mandagni. Acharya Sushruta has mentioned that Agni can be increased by using agneygunatmak substances. As the Jeerak churna has katu rasa, it performs the functions of deepan and pachan and increases the Agni. Acharya Charaka mentioned that aharamatra depends on agnibala, so when Agni grows, the total food intake capacity of subjects also increases. As a result, the Abhyavaharana shakti of the subject increased. As the Jeerak churna performs function pachana by their katu rasa and katu vipaka, it increases the Agni, improves the Jeerna ahara lakshana and reduction of jarankala and finally results in an increase in Jaran shakti. Agni Bala Index depends on Abhyavaharana shakti and Jarana shakti. When the difference in abhyavaharana score or jarankala or both increases, a reduction in Agni Bala Index occurs, indicating the agnivriddhi in the subject, as the Agni Bala Index and Agni have an inversely proportional relation.

After oral administration of Jeerak churna, it was found that the abhyavaharana score was increased in vatapradhan, pittapradhan and kaphapradhan prakriti also. The Jeerna ahara lakshana was improved, and the reduction of jarankala finally increased the Jarana shakti of subjects. It was also found that Abhyavaharana shakti and Jaran shakti are more effectively increased in pittapradhan subjects. From the above observations, Agni Bala Index was reduced, indicating agnivriddhi in mandagni subjects.

CONCLUSION

This clinical study shows better improvement in Agni of mandagni subjects. After the administration of Jeerak churna for 30 days, the Abhyavaharana shakti and Jarana shakti of individuals increased. Jeerak churna showed the agnivriddhi effect on all prakriti but more effectively worked on pittapradhan prakriti. Hence based on assessment, oral administration of Jeerak churna is safe and showed improvement in mandagni.

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