

A randomized open-label comparative clinical study of effect of lifestyle modification and *Shatapushpadya Churna* on *Agnimandya*

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Abstract

Background: Non-communicable diseases are expected to kill more people in the 21st century which are the resultant of deranged lifestyle such as unhealthy dietary habits and wrong behavioral pattern. In Ayurveda, *Ahara Vidhi* (dietary rules) and *Vihara* (conducts) are described in detail which can be included under the heading of lifestyle. *Agnimandya* (indigestion) is considered as the root cause of all diseases like diabetes mellitus, obesity etc., which are few among the top ten lifestyle disorders. **Aim:** The present study is aimed at establishment of relationship between disturbances in lifestyle and *Agnimandya* and role of lifestyle modification in correcting the state of *Agnimandya*. **Materials and Methods:** The present study was carried out on 33 patients diagnosed with *Agnimandya* having disturbed lifestyle. Patients were divided into two groups with simple random sampling method. In Group A, lifestyle modification was advised with placebo capsules of wheat flour, while in Group B, patients were treated with 2 g of *Shatapushpadya Churna* for 2 weeks. **Results:** Both the groups showed statistically highly significant results on majority of the symptoms of *Agnimandya*, however, Group A provided better effect than Group B. **Conclusion:** Lifestyle has definite role in the manifestation and treatment of *Agnimandya*.

Keywords: *Agnimandya*, conducts, dietetic rules, indigestion, lifestyle

Introduction

In a major shift of disease pattern, WHO has found that non communicable diseases are expected to kill 38 millions of people each year. Major risk factors under this umbrella are mainly lifestyle related conditions such as physical inactivity, unhealthy diet, and disturbed sleep pattern^[1] which are preventable. Hence, more attention has to be given to prevent these lifestyle related diseases. In classics, there are references of 100 years life span of the people who are accustomed with proper diet and regimen.^[2] Nowadays, due to disturbed lifestyle, i.e., faulty dietary habits and wrong behavioral pattern, life expectancy of male/female has been decreased to 67/70 years.^[3]

Lifestyle means a way in which a person lives, which includes entire activities and conducts by a person during the whole day, night and its methods, timing, place, etc. Hence, *Vihara* and *Ahara Vidhi* can be included under the heading of lifestyle in Ayurveda. *Vihara* consists of conducts explained under the

heading of *Dinacharya* (daily regimen), *Ritucharya* (seasonal regimen) and *Sadvritta* (behavioral regimen) and *Ahara Vidhi* (dietetic rules) consists of the conducts given under the heading of *Ahara Vidhi Vidhana* (codes of dietetics), *Bhojanottara Vidhi Vidhana* (conducts after meal) etc., which are described in detail in Ayurveda. Any alteration in these conducts leads to the manifestation of diseases.

Wrong dietary habits such as *Adhyashana* (eating after meal), *Vishamashana* (diet on irregular time and quantity), and wrong behavioral pattern such as *Vegadharana* (suppression of urges) leads to vitiation of *Doshas* independently or together causing *Agnimandya* (indigestion). In *Ayurveda*, it is believed

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that *Agnimandya* is the root cause for all the diseases^[4] such as *Prameha* and *Sthaulya*. In modern science also, it has been proved that there exists gut-brain-endocrine axis which involves ghrelin-leptin hormones, insulin and orexins. Disturbance in this axis leads to diseases such as obesity and diabetes mellitus which are among the top ten lifestyle disorders. The causes for these diseases are improper diet pattern, disturbed sleep pattern etc.^[5,6]

The present study is aimed at establishment of relationship between disturbances in lifestyle and *Agnimandya* and role of lifestyle modification in correcting the state of *Agnimandya* by correcting impaired *Ahara Parinamakara Bhavas* (factors responsible for digestion) and circadian rhythm. Therefore, in this study, *Agnimandya* caused by disturbed lifestyle has been selected and in one group, lifestyle modification has been suggested. In the other group, *Shatapushpadya Churna* was selected for comparison, as most of the contents have *Katu Rasa* (pungent taste), *Katu Vipaka* and *Agnidipana* (digestion improving) property.

Materials and methods

Patients attending the O.P.D. of Basic Principles with symptoms of *Agnimandya* and fulfilling the criteria of inclusion were selected for the present study. An elaborative case taking proforma was specially designed for the purpose of incorporating all aspects of the disease and lifestyle related to the disease in Ayurveda.

The present study was done as a randomized open-labeled clinical trial. The study was cleared by the Ethical Committee of the Institute for Postgraduate Teaching and Research in Ayurveda. Informed written consent was taken from each patient before starting the study. The study was registered in the Clinical Trial Registry of India (no.: CTRI/2014/02/004420).

Inclusion criteria

- Patients with symptoms of *Agnimandya* such as *Ajeerna* (indigestion), *Atilalavrava* (hyper salivation), *Aruchi* (dislike of food), *Adhmana* (heaviness of abdomen), *Vibandha* (constipation), and *Chardi* (vomiting)^[7,8]
- Patients between 15 and 60 years of age of either sex.

Exclusion criteria

- Patients suffering from any systemic diseases such as hypertension, and diabetes mellitus
- Patient having any established pathology of gastrointestinal tract
- People performing night duty for long time and who can't change their lifestyle.

Investigations

Hemoglobin%, total leukocyte count, differential leukocyte count, erythrocyte sedimentation rate, total red blood cells, routine and microscopic examination of urine, and routine & microscopic examination of stool were done before initiating the treatment to rule out other pathology.

Grouping and posology

The study was conducted in 33 diagnosed patients of *Agnimandya*. They were randomly divided in to two groups. In Group A, lifestyle modification was advised along with two placebo capsules of wheat flour 250 mg twice daily with lukewarm water with the meal for 2 weeks. In Group B, two grams of *Shatapushpadya Churna* was administered twice daily with lukewarm water with the meal for 2 weeks. The contents of *Shatapushpadya Churna*^[9] are *Shatapushpa* (*Anethum sowa* Kurz.), *Vidanga* (*Embelia robusta* C.B. Clarke, non-Roxb.), *Maricha* (*Piper nigrum* Linn.), and *Saindhava* (*Sodium chloridum*).

Criteria for evaluation of lifestyle disturbance [Table 1]

Evaluation of lifestyle disturbance related to the disease *Agnimandya* was made on the basis of scoring and gradation pattern which includes dietetic rules and conducts during and after meal which are described in Ayurveda. Criteria for total assessment of lifestyle disturbance is mentioned in Appendix 1.

Criteria for assessment of effect of therapy [Table 2]

Improvement in *Agnimandya* after treatment was assessed on the basis of improvement in chief complaints, *Abhyavaharana Shakti* (food intake capacity), *Jarana Shakti* (digestive capacity) and *Mala Samata* (improperly formed feces) by scoring and gradation pattern. Gradations for assessment of effect of therapy are mentioned in Appendix 2.

Observations and discussion

The present study reveals that among 30 completed patients, 42.5% were between 31 and 40 years and 33.27% were between 21 and 30 years. This may be because, these people have hectic works schedule and have more family responsibilities. They are less concerned with their health and are following improper dietetic and behavioral regimen, resulting in impaired digestive power. 51.3% of the patients diagnosed were males and they had this disease due to their irregular food pattern during their works schedule, 32.4% of the patients diagnosed were employees and this was because they were exposed to untimely and unhealthy food habits due to their increased work load.

Table 1: Criteria for evaluation of lifestyle disturbance

Criteria	Percentage
Severely disturbed lifestyle	75-100
Marked disturbed lifestyle	51-75
Moderately disturbed lifestyle	25-50
Mild disturbed lifestyle	<25

Table 2: Criteria for assessment of effect of therapy

Criteria	Percentage
Complete remission	76-100
Marked improvement	51-75
Mild improvement	25-50
Unchanged	<25

Observations related to conducts

Lack of exercise and sitting type of work were found in 87.9% and 64.5% of patients respectively. It is a major cause for vitiation of *Kapha*^[10] which hampers the digestion. Vigilance at night was found in 57.9% of the patients. It leads to vitiation of *Samana Vata*^[11] and *Agni*.^[12] In human body, there exists a circadian rhythm and is must for activities of digestive enzymes. Wakefulness at night causes disruption in circadian rhythm and disturbance in activities of digestive enzymes which leads to indigestion.^[13] Day time sleep was found in 85.1% of the patients which leads to vitiation of *Kapha* and hampers digestive power.^[11,14,15] Suppression of urge of micturition and defecation was found in 51.1% of patients and suppression of hunger was found in 45.4% of patients. It leads to vitiation of *Apana Vata* which further leads to vitiation of *Samana Vata* and hampers digestion.^[16,17]

Observations related to dietary habits

Intake of food for four times per day was found in 48.2% of patients. It results in mixture of immature *Rasa* with the product of food taken after ward, resulting in the provocation of all the *Doshas* instantaneously.^[10] Irregular breakfast, lunch and dinner were found in 72.4%, 57.2% and 50.7% patients respectively, which disrupts the normal digestive pattern adhered to a circadian rhythm.^[18] Intake of non vegetarian food, curd and oily foods during night time was found in 23.8% of the patients. Intake of cold drinks and cold butter milk at night was found in 30.2% and intake of milk at night was found in 23.6% of the patients. At night, there is decrease in the function of all systems of body. Therefore, food items which are difficult to digest and sticky, for example, non-vegetarian foods, curd,^[19] milk,^[20] oily food^[21] during night time causes improper digestion. Intake of cold food was present in 63.6% of patients. It results in indigestion due to lack of *Ushnata* (heat), which is one of the *Ahara Parinamakara Bhava*^[22] essential for proper digestion of food.

Intake of more quantity of food was found in 79.2% of the patients and intake of food when previous food is not digested were found in 56.8% of the patients. When food is being taken in more quantity, it can't be digested properly due to improper functioning of *Vayu*.^[22] Performing different activities such as watching TV, internet chatting, answering phone calls and operating computer etc., during meals was found in 90.1% and talking during meals was found in 84.7% of the patients. The quantity of the meal exceeds the normal limit in these cases which results in over eating which badly affects their digestive power.^[23]

Observations about water drinking habits

Intake of more quantity of water was found in 47.8% of patients. Excess dilution of the gastric contents lows down digestion.^[24] Habit of taking of large quantity of water after meal was present in 90.2% of patients. Normally, abdominal muscles relax after consumption of food and water, to accommodate ingested substances and help in digestion. Excessive intake of water after taking meal can result in prolonged abdominal muscle relaxation^[25] which in turn can cause indigestion. Intake of large quantity of water before meal was found in 23.5% patients. It leads to dilution of the HCl, resulting in decrease in digestive power.^[26]

Markly disturbed, moderately disturbed and mildly disturbed lifestyle was found in 12.1%, 81.8% and 6% of the patients of *Agnimandya*, respectively. Habit of intake of large quantity of water in morning, i.e., after sunrise was present in 63.4% patients. *Acharya Bhavamishra*^[27] has advised to drink water in the last part of night who has predominance of *Vata* in the body. If one drinks water in this period, it helps in the easy passage of the stool. In the morning, after sunrise, *Kapha* is dominant in the body. Intake of excess water in this period leads to vitiation of *Kapha*. Intake of large quantity of water at night was found in 81.4% patients, which also leads to vitiation of *Kapha*.^[28]

Observations about symptoms of *Agnimandya*

The symptoms such as indigestion, heaviness in abdomen, and dislike for food were present in all the patients, while hyper salivation was found in 90% of the patients. Constipation was present in 96.7% and vomiting was present in 53.3% of the patients. *Avara Jarana Shakti* was found in 69.69% patients and *Avara Abhyavaharana Shakti* was found in 72.72% of the patients.

Results

In Group A (lifestyle modification), statistically, highly significant results was found in all the chief and associated complaints of *Agnimandya* such as indigestion (82.22%), heaviness of abdomen (95.56%), hyper salivation (84.52%), dislike of food (86.67%), and constipation (92.86%). Significant result was found in vomiting (87.5%) [Table 3]. Significant improvement was found in *Abhyavaharana Shakti* (76.06%) [Table 4], *Jarana Shakti* (89.47%) [Table 5] and *Mala Samata* (91.57%) [Table 6].

In Group B (*Shatapushpadya Churna*), statistically, highly significant results was found in all the symptoms of *Agnimandya* such as indigestion (55.56%), heaviness of abdomen (72.22%), hyper salivation (73.08%), dislike of food (65.56%) and constipation (85.6%). Significant result was found in vomiting (100%) [Table 7]. Significant improvement was found in *Jarana Shakti* (70.31%) [Table 9], *Abhyavaharana Shakti* (61.71%) [Table 8] and *Mala Samata* (83.02%) [Table 10].

Overall effect of therapy reveals that Group A had provided better effect than Group B [Tables 11, 12 and Figure 1].

Probable mode of action of lifestyle modification:

Agnimandya is a disease which involves impairment of digestive power. All the above mentioned causes are responsible for impairment of *Ahara Parinamakara Bhavas* and disruption of circadian rhythm of digestive enzymes. Modification in all these causes lead to re-establishment of *Agni* and improvement in status of *Agnimandya*.

Conclusion

Disturbance in lifestyle in the form of irregular sleep pattern and improper diet in take mainly affect the *Ahara*

Table 3: Effect of lifestyle modification (Group A) on complaints of *Agnimandya* (n=15)

Chief complaints	Relief percentage	Mean		SE±	t	P
		Before treatment	After treatment			
Indigestion	82.22	3	0.53	0.133	18.500	<0.001
Heaviness of abdomen	95.56	2.73	0.13	0.163	15.922	<0.001
Dislike of food	86.67	2.67	0.27	0.235	10.212	<0.001
Hyper salivation	84.52	1.53	0.27	0.182	6.971	<0.001
Constipation	92.86	1.47	0.13	0.159	8.367	<0.001
Vomiting	87.5	0.8	0.07	0.267	2.750	0.016

SE: Standard error

Table 4: Effect of lifestyle modification (Group A) on *Abhyavaharana Shakti* (n=15)

<i>Abhyavaharana Shakti</i>	Relief percentage	Mean		SE±	t	P
		Before treatment	After treatment			
Quantity of food	72.22	2	0.53	0.192	7.643	<0.001
Frequency of food	71.43	1.87	0.53	0.159	8.367	<0.001
Intensity of hunger	83.33	2.27	0.33	0.248	7.790	<0.001

SE: Standard error

Table 5: Effect of lifestyle modification (Group A) on *Jarana Shakti* (n=15)

<i>Jarana Shakti</i>	Relief percentage	Mean		SE±	t	P
		Before treatment	After treatment			
Feeling of lightness	91.11	2.4	0.13	0.228	9.934	<0.001
Activeness	85.56	2.06	0.33	0.206	8.404	<0.001
Pure belching	90	2.6	0.27	0.187	12.486	<0.001
Feeling of hunger	86.67	2.53	0.33	0.223	9.886	<0.001
Disappearance of exhaustion	91.11	2.47	0.2	0.182	12.475	<0.001

SE: Standard error

Table 6: Effect of lifestyle modification (Group A) on *Mala Samata* (n=15)

<i>Mala Samata</i>	Relief percentage	Mean		SE±	t	P
		Before treatment	After treatment			
Sticky stool	88.89	2.67	0.33	0.159	14.642	<0.001
Foul smelling	90	2.6	0.27	0.187	12.486	<0.001
Loose consistency	91.11	2.6	0.27	0.159	14.642	<0.001
Presence of undigested food particles	97.78	2.47	0.07	0.214	11.225	<0.001

SE: Standard error

Table 7: Effect of *Shatapushpadya Churna* (Group B) on complaints of *Agnimandya* (n=15)

Chief complaints	Relief percentage	Mean		SE±	t	P
		Before treatment	After treatment			
Indigestion	55.56	3	1.67	0.211	7.906	<0.001
Heaviness of abdomen	72.22	2.53	0.73	0.175	10.311	<0.001
Dislike of food	65.56	2.33	0.87	0.215	6.813	<0.001
Hyper salivation	73.08	1.27	0.33	0.206	4.525	<0.001
Constipation	85.6	1.67	0.33	0.159	8.367	<0.001
Vomiting	100	0.8	0	0.262	3.055	0.009

SE: Standard error

Parinamakara Bhavas and circadian rhythm which leads to manifestation of *Agnimandya*. In this clinical study,

Group A (lifestyle modification), provided significantly better result (<0.005) in comparison to Group B (*Shatapushpadya*

Table 8: Effect of *Shatapushpadya Churna* (Group B) on *Abhyavaharana Shakti* (n=15)

<i>Abhyavaharana Shakti</i>	Relief percentage	Mean		SE±	<i>t</i>	<i>P</i>
		Before treatment	After treatment			
Quantity of food	47.78	1.93	1	0.182	5.137	<0.001
Frequency of food	64.29	1.73	0.67	0.118	9.025	<0.001
Intensity of hunger	70	2.6	0.8	0.145	12.435	<0.001

SE: Standard error

Table 9: Effect of *Shatapushpadya Churna* (Group B) on *Jarana Shakti* (n=15)

<i>Jarana Shakti</i>	Relief percentage	Mean		SE±	<i>t</i>	<i>P</i>
		Before treatment	After treatment			
Feeling of lightness	77.78	2.27	0.53	0.228	7.597	<0.001
Activeness	70	2.13	0.6	0.256	5.996	<0.001
Pure belching	71.11	2.6	0.8	0.175	10.311	<0.001
Feeling of hunger	62.22	2.73	1.07	0.187	8.919	<0.001
Disappearance of exhaustion	65.56	2.47	0.87	0.235	6.808	<0.001

SE: Standard error

Table 10: Effect of *Shatapushpadya Churna* (Group B) on *Mala Samata* (n=15)

<i>Mala Samata</i>	Relief percentage	Mean		SE±	<i>t</i>	<i>P</i>
		Before treatment	After treatment			
Sticky stool	80	1.93	0.53	0.163	8.573	<0.001
Foul smelling	86.67	2	0.4	0.163	9.798	<0.001
Loose consistency	83.33	1.47	0.27	0.200	6.000	<0.001
Presence of undigested food particles	84.44	2	0.43	0.163	9.798	<0.001

SE: Standard error

Table 11: Overall effect of therapy of Group A and Group B

Criteria for Effect of therapy	Group A (%)	Group B (%)
Complete remission	13.33	6.67
Marked improvement	66.67	20
Moderate improvement	26.67	66.67
Mild improvement	0	6.67
Unchanged	0	0

Table 12: Comparison of overall effect of therapy between Group A and Group B (n=15)

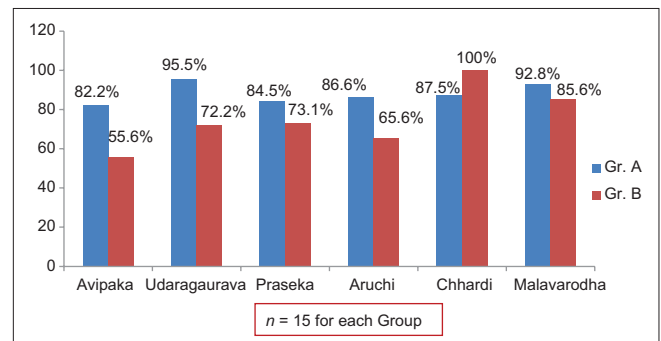
Groups	Mean	SD±	SE±	<i>t</i>	<i>P</i>
Group A	10.800	1.521	0.393	3.055	0.005
Group B	8.000	3.207	0.828		

SD: Standard deviation, SE: Standard error

Churna). Thus, it can be concluded that lifestyle has major role in the manifestation and management of the *Agnimandya*.

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**Figure 1: Comparison of effect of therapy between Group A and Group B on symptoms of *Agnimandya***

Conflicts of interest

There are no conflicts of interest.

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Appendix

Criteria for gradation

Appendix 1: Scoring and Gradation for assessment of Lifestyle

Serial number	Criterion	Points for scoring	Scoring pattern
1	Luke warm food	3	Extremely hot food which causes ulceration of mouth
		2	More hot food which produces burning sensation in mouth, esophagus
		1	More hot food but not producing any symptom
		0	Luke warm and freshly prepared food
		-1	Reheated food
		-2	Food having temperature equal to room temperature
		-3	Freeze food
2	Unctuous food	3	(a) Food containing additional ghee + (b) cooked in more quantity of oil + (c) containing milk product
		2	(a) + (b) + No (c)
		1	No (a) + (b) + No (c)
		0	(a) + No (b) + No (c)
		-1	(a) + (d) cooked in less quantity of oil + (e) do not contain pulses, potato etc.
		-2	No (a) + (d) + (e)
		-3	No (a) + (d) + No (e)

Contd...

Appendix 1: Contd...

Sr. no.	Criterion	Points for scoring	Scoring pattern
3	Proper quantity	3	(a) Eats more in quantity than hunger- almost daily which causes uneasiness in sitting, sleeping, walking, breathing, talking
		2	(a) 4-6 times/week leading to unwillingness for food
		1	(a) 1-2 times/week leading to pressure in abdomen
		0	No (a) with no pressure in abdomen, hunger satisfaction, easiness in sitting etc.
		-1	(b) Eat less in quantity than hunger 1-2 times/week leading to lightness in abdomen
		-2	(b) 4-6 times/week leading to willingness for food
		-3	(b) Almost daily leading to inability for sitting etc.
4	Intake of food at proper time	3	>2 h before feeling of hunger, daily
		2	1-2 h before feeling of hunger, 3-4 times/week
		1	½-1 h before feeling of hunger, 1-2 times/week
		0	Within ½ h after feeling of hunger, daily
		-1	½-1 h after feeling of hunger, 1-2 times/week
		-2	1-2 h after feeling of hunger, 3-4 times/week
		-3	>2 h after feeling of hunger, daily
5	Incompatible food	0	No intake of hot + cold food at same time
		1	Moderately cold + moderately hot, occasionally
		2	Very cold + very hot, occasionally
		3	Very cold + very hot, daily
6	Intake of meal with full concentration	0	No (a) tension/TV/phone calls/computer/chatting at the time of meal
		1	(a) Occasionally, for some time during meal
		2	(a) Often, during whole meal
		3	(a) Almost daily, during whole meal
7	Intake of meal without talking	0	No talk/about 12 sentences
		1	Talk occasionally, for some time during meal/2-6 sentences
		2	Talk often, during whole meal/6-10 sentences
		3	Talk daily, during whole meal/>10 sentences
8	Intake of meal without laughing	0	No laugh
		1	Laugh occasionally, for some time during meal
		2	Laugh often, during whole meal
		3	Laugh daily, during whole meal
9	Intake of meal not very slow not very fast	3	>40 min
		2	30-40 min
		1	20-30 min
		0	15-20 min
		-1	10-15 min
		-2	5-10 min
		-3	<5 min
10	Conduct after lunch	3	Sleep with in ½ h
		2	Sleep after 1-1½ h
		1	Sleep after 2 h
		0	Rest but do not sleep/walk for 5-10 min
		-1	Not heavy work like
		-2	Moderately heavy work
		-3	Heavy work
11	Pressure on abdomen	0	No
		1	Tight clothing
		2	Work in sitting posture with pressure on abdomen
		3	Sleep in prone position
12	Duration of sleep	0	No sleep
		1	30-60 min/occasionally
		2	1-2 h/often
		3	>2 h/almost daily

Contd...

Appendix 1: Contd...

Sr. no.	Criterion	Points for scoring	Scoring pattern
13	Travelling after meal	0	No
		1	½-1h/convenient vehicles/on smooth roads/occasionally
		2	1-2 h/moderately in convenient vehicles/on moderately rough roads/often
		3	Travelling for >2h/inconvenient vehicles/on rough roads/almost daily
14	Exposure to sunlight after meal	0	No
		1	30-60 min in other seasons/15-30 min in summer/occasionally
		2	45-90 min in other seasons/30-45 min in summer/often
		3	>90 min in other seasons/>45 min in summer/almost daily
15	Conducts after dinner	0	Walk for 5-10 min/sleep after 2 h of dinner
		1	Sleep within 2 h of dinner
		2	Sleep within 1-1½ h of dinner
		3	Sleep within ½ h of dinner
16	Relation of water intake with food	3	>200 ml just after meal
		2	100-200 ml after 1h of meal
		1	100-200 ml after ½ h of meal
		0	Sip by sip during meal
		-1	Abruptly during meal which hampers appetite
		-2	100-200 ml before meal
		-3	>200 ml before meal
17	Quantity of water intake with food	3	More than thirst and produces symptoms such as pressure in abdomen, pressure in chest and vomiting
		2	More than thirst and produces symptoms such as pressure in abdomen
		1	Drink water in more quantity than thirst but does not produce any symptom
		0	Required quantity of water on thirst
		-1	No intake of water even on thirst for ½-1 h and do not cause any symptom/occasionally
		-2	No intake of water even on thirst for 1-2 h and cause symptoms such as dryness of mouth/often
		-3	No intake of water even on thirst for >2h and cause symptoms such as tiredness, chest pain/almost daily
18	Intake of food on thirst and water on hunger	3	More quantity of water on hunger causing nausea, vomiting/almost daily
		2	Moderate quantity of water on hunger hampers the appetite/often
		1	Small quantity of water on hunger produces no symptoms/occasionally
		0	No intake of food on thirst/water on hunger
		-1	Small quantity of food on thirst but not cause any symptoms/occasionally
		-2	Moderate quantity of food on thirst which causes symptoms such as pain in abdomen/often
		-3	More quantity of food on thirst which causes symptoms such as pain in chest region/almost daily
19	Intake of water immediately after waking up	0	No
		1	<100 ml/occasionally
		2	100-200 ml/often
		3	>200 ml/almost daily
20	Water immediately before sleep at night	0	No
		1	<100 ml/occasionally
		2	100-200 ml/often
		3	>200 ml/almost daily
21	(a) Day sleep (late awakening + after noon sleep) + (b) vigilance at night	3	(a) >4 h/day/almost daily
		2	(a) 3-4 h/day/often
		1	(a) 1-2 h/day/occasionally
		0	No (a) + (b)
		-1	No (a) + (b)
		-2	(b) 3-4 h/day/often
		-3	(b) >4 h/day/almost daily

Contd...

Appendix 1: Contd...

Sr. no.	Criterion	Points for scoring	Scoring pattern
22	Quantity of exercise	3	No
		2	Not regularly/for 5-10 min
		1	Regularly/for 10-15 min
		0	Regularly up to half of capacity leading to sweating in arms, forehead, increase in heartbeat in winter-autumn, and little less in summer- rainy season
		-1	Little more quantity leading to thirst
		-2	Moderate quantity leading to coughing
		-3	Excess quantity leading to fever
23	Suppression of urges of urine and defecation	0	No
		1	Occasionally/30-45 min
		2	Often/45-90 min
		3	Almost daily/>90 min
24	Quantity of work	3	<2 h/day, not heavy work
		2	2-4 h/day, not heavy work
		1	4-6 h/day, not heavy work
		0	6-8 h/day, moderate work
		1	8-10 h/day, moderate work
		2	10-12 h/day, moderate work
		3	>12 h/day, heavy work

Appendix 2: Scoring and Gradation of symptoms of *Agnimandya*

Serial number	Criterion	Scoring pattern	Scoring pattern
1	Indigestion	0	No
		1	After heavy meal
		2	After intake of food in normal quantity
		3	After intake of food in less in quantity
2	Abdominal heaviness	0	1½ h after meal
		1	1½-13 h of meal
		2	3-6 h of meal
		3	6-8 h of meal
3	Hyper salivation	0	No
		1	Present but no inconvenience
		2	Has to spit once or twice
		3	Spits continuously, hampering his speech or dribbling of saliva at night
4	Dislike of food	0	No
		1	Partially at lunch/ dinner
		2	Partially at lunch + dinner
		3	Completely at lunch + dinner
5	Vomiting	0	No
		1	Occasionally
		2	2-3 times/week
		3	>3 times/week
6	Constipation	0	No
		1	Passage of stool after stimulation like smoking, tea etc, with proper quantity
		2	Frequently irregular with less quantity need laxatives frequently
		3	Always constipated even after stimulation and laxatives

Contd...

Appendix 2: Contd...

Serial number	Criterion	Scoring pattern	Points for scoring
Abhyavaharana Shakti			
1	Quantity of food	0	Proper quantity
		1	25 % less
		2	50 % less
		3	>50 % less
2	Frequency of food per day	0	>2 times
		1	2 times
		2	1 time
		3	<1 time
3	Intensity of hunger	0	Proper
		1	Moderate
		2	Less
		3	No hunger
Jarana Shakti			
4	Feeling of lightness after meal	0	<2 h
		1	4-6 h
		2	6-8 h
		3	>8 h
5	Activeness after meal	0	<2 h
		1	<2h
		2	6-8 h
		3	>8 h
6	Pure belching	0	<3 h
		1	3-5 h
		2	5-8 h
		3	>8 h
4	Feeling of hunger	0	<4 h
		1	4-6 h
		2	6-8 h
		3	>8 h
5	Disappearance of exhaustion	0	<2 h
		1	4-6 h
		2	6-8 h
		3	>8 h
Mala Samata			
1	Sticky stool	0	No
		1	Rarely
		2	Frequently
		3	Always
2	Foul smelling	0	No
		1	Rarely
		2	Frequently
		3	Always
3	Loose consistency of stool	0	No
		1	Rarely
		2	Frequently
		3	Always
4	Presence of undigested food practices	0	No
		1	Rarely
		2	Frequently
		3	Always

Statistical analysis: Statistical analysis was carried out using Student's *t*-test

हिन्दी सारांश

जीवनशैली तथा शतपुष्पाद्य चूर्ण का अग्निमांद्य पर प्रभाव - एक यादृच्छिक तुलनात्मक नैदानिक अध्ययन

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२१ वीं सदीमें बदलती जीवनशैली जैसे अनुचित आहार प्रवृत्ति एवं आचार के कारण असंसर्गजन्य विकार प्रायः मृत्यु का कारण बन रहे हैं। आयुर्वेद में आहार विधि तथा विहार इनका विस्तार से वर्णन प्राप्त होता है जो कि जीवन शैली में समाविष्ट किए जा सकते हैं। इनमें अग्निमांद्य सबसे महत्वपूर्ण व्याधि है। अग्निमांद्य को सर्व व्याधियों जैसे मधुमेह एवं स्थौल्य का मूल कारण माना है जो कि जीवनशैलीजन्य विकारों में प्रथम १० विकारों में एक है। प्रस्तुत अध्ययन में अग्निमांद्य के ३३ रुग्णों को चिकित्सा के लिए चुना गया, जिनमें से ३० रुग्णों ने चिकित्सा पूर्ण की। अध्ययन में समाविष्ट रुग्णों को दो वर्गों में विभाजित किया गया, वर्ग ए में जीवनशैली परिवर्तन एवं प्लेसीबो एवं वर्ग बी में शतपुष्पाद्य चूर्ण औषधि रूप में दिया गया। चिकित्सीय परिणामों का विश्लेषण अग्निमांद्य के लक्षणों में सुधार के आधार पर किया गया। जिसमें वर्ग ए एवं वर्ग बी दोनों में अग्निमांद्य के लक्षणों में सांख्यिकीय दृष्टि से अच्छे परिणाम पाये गए। परंतु तुलनात्मक दृष्टि से वर्ग बी की अपेक्षा वर्ग ए में ज्यादा अच्छे परिणाम प्राप्त हुये।