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Sunthi Siddha Jala (Ginger medicated water) as a Preventive Seasonal Intervention for Kapha-Related Disorders: Evidence from a Randomized Controlled Trial

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ABSTRACT

Seasonal changes are known to exert a profound influence on human physiology, often leading to disturbances in metabolism, digestion, and immune balance. In Ayurveda, Vasanta Rutu (spring season) is described as a critical period during which Kapha dosha undergoes aggravation, manifesting as loss of appetite, lethargy, heaviness of the body, excessive salivation, cough, cold, and respiratory congestion. Classical texts recommend Sunthi Siddha Jala (medicated water prepared with dry ginger) as part of Rutucharya for mitigating these symptoms. However, clinical evidence evaluating its efficacy in a systematic manner remains limited.

The present study aimed to assess the preventive and therapeutic effect of Sunthi Siddha Jala in reducing Kapha-related symptoms during Vasanta Rutu. A randomized controlled, open-label, parallel-group clinical trial was conducted on 60 volunteers, of which 55 completed the study. Participants were randomly allocated into two groups: Group A received Sunthi Siddha Jala daily, and Group B received plain potable water, for a period of 28 days. Symptoms of Kapha vitiation were documented at baseline and reassessed on Day 3, 7, 14, 21, and 28 using standardized symptom grading scales. Data were analysed using the Mann–Whitney U test.

The results revealed that Group A experienced significantly faster and more complete relief in Kapha-related symptoms compared to Group B ($p < 0.05$). By the 21st day, all participants in Group A achieved remission of key symptoms such as agnisadan (loss of appetite), praseka (excessive salivation), aalasya (laziness), gaurava (heaviness), shaitya (feeling of cold), shlathangatwa (sluggishness of the body), shwas (breathlessness), kasa (cough), and atinidra (excessive sleep). In contrast, Group B showed only partial improvement even by Day 28. Importantly, no adverse effects were reported.

The study concludes that Sunthi Siddha Jala is a safe, cost-effective, and clinically effective measure for preventing and managing Kapha aggravation during Vasanta Rutu. Its use not only reflects classical Ayurvedic wisdom but also aligns with modern insights into the pharmacological benefits of ginger. Further large-scale studies with objective biochemical parameters are recommended to validate and expand these findings.

Keywords: Ayurveda, Sunthi Siddha Jala, Kapha dosha, Vasanta Rutu, seasonal disorders, randomized controlled trial..

1. INTRODUCTION

Seasonal transitions are well known to influence human physiology, leading to alterations in immune defence, digestion, and overall metabolic activity[1]. The spring season (Vasant Ritu), which follows the cold and heavy winter months, is particularly associated with symptoms such as lethargy, reduced appetite, heaviness of the body, cough, respiratory congestion, and excessive mucus secretion[2]. In Ayurvedic science, these manifestations are explained through the concept of Kapha dosha imbalance—a state in which the body's fluidic and nutritive elements, which naturally accumulate during late winter, become aggravated in spring due to rising ambient temperatures[3]. Modern biomedical perspectives parallel this observation, as [5].,

seasonal variation in humidity and temperature is known to increase the incidence of respiratory and metabolic disturbances[4]. Addressing these imbalances through seasonal adaptation of diet and lifestyle is therefore critical for preventive health

Among natural remedies, ginger (*Zingiber officinale*), especially in its dried form known as Sunthi, has been extensively studied for its anti-inflammatory, antioxidant, immunomodulatory, and digestive-enhancing properties[6–8], with active compounds like gingerols and shogaols demonstrating efficacy in alleviating respiratory congestion and stimulating gastric function[9,10]. These pharmacological actions directly counteract the key clinical features of *Kapha* aggravation, such as sluggish digestion, mucus overproduction, and respiratory discomfort[11]. Despite its long-standing traditional use as a household remedy[12], the specific intervention of Sunthi Siddha Jala (dry ginger medicated water) during spring has not been adequately evaluated in a systematic clinical framework. Given its simplicity, affordability, and cultural acceptability, this intervention holds promise as a practical public health measure to minimize Kapha-related seasonal disorders[13]. Hence, the present study seeks to provide scientific evidence for the role of Sunthi Siddha Jala in mitigating *Kapha* imbalance during spring, bridging traditional preventive practices with contemporary clinical understanding, and contributing to integrative strategies for lifestyle-related disorder prevention.

Materials and Methods

Study Materials

Intervention Drug: Sunthi (Zingiber officinale) – authenticated dried rhizome, procured from a certified source and standardized at a recognized pharmacognosy laboratory.

Control Drug: Fresh, potable drinking water meeting standard quality parameters.

Study Design

This was a randomized, controlled, parallel-group clinical trial conducted at Dr. D.Y. Patil College of Ayurveda & Research Centre, Dr. D. Y. Patil Vidyapeeth, Pimpri, Pune. Participants were randomized into two groups:

Control Group: Received normal potable water.

Trial Group: Received Sunthi Siddha Jala (dry ginger medicated water).

Randomization was performed using the lottery method. The trial was conducted over a duration of 28 days, with follow-up assessments on the 3rd, 7th, 14th, 21st, and 28th days.

As this was an open-label study, no blinding was applied. Allocation concealment was not implemented, as the intervention required visible preparation and administration of medicated water.

Ethical Considerations

The study protocol was reviewed and approved by the Institutional Ethics Committee (Approval No: AY/PG/045/2019-2020/IEC). Written informed consent was obtained from all participants before enrollment, in compliance with ethical principles outlined in the Declaration of Helsinki.

Sample Size and Participants

A total of 60 volunteers fulfilling the eligibility criteria were recruited. Due to dropouts (n = 5), 55 participants completed the study and were included in the final analysis.

Throughout the study period, no adverse events were observed or reported by participants in either group.

Inclusion Criteria

Volunteers with Vata- or Kapha-dominant Prakruti.

Age group 30–60 years, irrespective of gender, socio-economic, religious, or marital status.

Presence of Kapha vitiation symptoms, including:

Agnisada (loss of appetite)

Praseka (excessive salivation)

Aalasya (lethargy)

Gaurava (sense of heaviness)

Shaitya (cold sensations)

Shlathangatva (generalized weakness)

Shwasa (dyspnea)

Kasa (cough)

Atinidra (excessive sleepiness)

Exclusion Criteria

Volunteers with Pitta-dominant Prakruti.

Individuals with major systemic illnesses or those on long-term medication.

Volunteers unwilling to participate or provide informed consent.

Withdrawal Criteria

Development of adverse events attributable to the intervention.

Lack of therapeutic response or worsening of symptoms during the study.

Voluntary withdrawal of consent by participants.

Intervention Protocol

Trial Group: Received medicated water prepared by boiling zinger powder in potable water under standardized conditions, administered as per study protocol.

Control Group: Received equivalent volumes of plain potable water.

Both groups were instructed to continue their usual diet and routine but avoid any additional interventions targeting Kapha-related symptoms.

Method Preparation of Dry Ginger Medicated Water (Sunthi Siddha Jala)[14]

The preparation of Sunthi Siddha Jala was carried out in accordance with the guidelines described in Sharangadhara Samhita [3]. This formulation is considered an upakalpana (modified preparation) of Kwatha (decoction) and is specifically recommended in Vasanta Rutucharya (Spring regimen) for daily consumption.

Standard Operating Procedure (SOP):

Measurement of ingredients:

Sunthi churna (coarse powder of dried ginger rhizome) – 40 g.

Potable water – 2560 ml (64 parts).

Standard Preparation process:

A clean stainless-steel vessel was taken. Using a calibrated measuring jar, 1.5 liters of potable water was poured into the vessel and the level was marked. Another 1.5 liters was added, making a total of 3 liters.

40 g of course Sunthi powder was added to the water.

The vessel was placed on a low flame without covering with a lid to allow free evaporation.

The water was gently boiled and reduced until the marked level of 1.5 liters was reached (approximately half the initial volume).

The vessel was removed from the flame and allowed to cool until lukewarm, facilitating sedimentation of coarse particles.

Filtration:

The supernatant liquid was carefully decanted and filtered through a clean muslin cloth, avoiding disturbance of the sediment at the base.

Final product:

The resultant medicated water (Sunthi Siddha Jala) was collected in a sterilized container and used for daily administration.

Dosage and Administration

As per Sharangadhara Samhita [3], Siddha Jala is consumed as potable water throughout the day, in place of plain drinking water.

Participants were instructed to consume the medicated water ad libitum according to thirst, thereby mimicking its practical seasonal use in Vasanta Rutu.

No fixed volume per dose was imposed; instead, volunteers were advised to replace their usual daily water intake with the prepared medicated water.

A B C

Fig No. 1- A. Dry Ginger (Sunthi), B. Measurinng Jar, C. Dr ginger medicated water (Sunthi Siddha jala)

Assessment criteria-

The condition was assessed before and after preventive treatment period and after follow up period on the basis of the sign and symptoms.

Subjective parameters

Table No. 1- Agnisadan (Loss of Appetite):[15]

Sr. No.	Characteristics	Grade
1	Normal (Feeling of hunger as usual with complete digestion.)	0
2	Mild (feeling of hunger appears after 2-3 hours of usual time with digestion, but not the normal (for1-2 days)	1
3	Moderate (Feeling of hunger appears after 4-6 hours of usual time with digestion, but not the normal, with reduced intake.) (for 3-4 day)	2
4	Severe (Feeling of hunger appears after >6 hr of usual time with digestion, but not the normal, with reduced intake) (Since> 4 d ay)	3

Table No. 2 -Prasek (Excessive Salivation):

Sr. No.	Characteristics	Grade
1	Normal (No salivation and spitting of kapha)	0
2	Mild (minimum salivation and spitting of kapha)	1
3	Moderate (salivation and recurrent spitting causes disturbed sleep in night)	2
4	Severe (salivation and spitting persist for more hours)	3

Table No. 3 -Aalasya (Laziness):[16]

Sr. No.	Characteristics	Grade
1	No Alasya (doing work satisfactory & in time)	0
2	Doing work satisfactory with late initiation	1
3	Doing work unsatisfactory with lot of mental pressure and late in time	2

4	No starting any work in his own responsibility doing little work very slowly	3

Table No. 4 Gaurav (Feeling of heaviness in the body):[17]

Sr. No.	Characteristics	Grade
1	Normal (No heaviness)	0
2	Mild (Occasionally feeling of heaviness for sometimes in body)	1
3	Moderate (Feeling of heaviness for sometimes in body but not affecting activities of daily living)	2
4	Severe (Daily feeling of heaviness over body, Which leads to Akarmanyata)	3

Table No. 5 Shaitya (Coldness):

Sr. No.	Characteristics	Grade
1	Normal	0
2	Mild	1
3	Moderate	2
4	Severe	3

Table No. 6 Shlathangatwa (Weankness):

Sr. No.	Characteristics	Grade
1	Normal (No feeling of weakness)	0
2	Mild (weakness not hampering routine activities)	1
3	Moderate (weakness hampering routine activities)	2
4	Severe (weakness at resting)	3

Table No. 7 Shwas (Dyspnoea):

Sr. No.	Characteristics	Grade
1	Normal (Dyspnoea after heavy work (movement) but relieved soon and up to tolerance)	0
2	Mild (Dyspnoea after moderate work but relieved later and up to tolerance))	1
3	Moderate (Dyspnoea after little work but relieved later and up to tolerance)	2
4	Severe (Dyspnoea after little work but relieved laterand beyond tolerance 0)	3

Table No. 8 Kasa (Cough):

Sr. No.	Characteristics	Grade
1	Nil (No cough)	0

2	Mild (Cough with expectoration with slight difficulty)	1
3	Moderate (Cough with pain difficulty in expectoration, patient can tolerable)	2
4	Severe (Cough with more difficulty in expectoration, patient can't tolerate)	3

Table No.9 Atinidra (Excessive Sleep):[18]

Sr. No.	Characteristics	Grade
1	Normal & sound sleep for 6 – 8 hrs./24 hrs. with feeling of lightness and relaxation in the body & mind	0
2	Sleep >8 -9 hrs./24 hrs. with slight heaviness in the body	1
3	Sleep >9- 10 hrs./24 hrs. with heaviness in the body associated with Jrimbha	2
4	Sleep >10 hrs./24 hrs. with heaviness in the body associated with Jrimbha & Tandra	3

Data Collection and Outcome Assessment

Participants were assessed at baseline and subsequently on Day 3, 7, 14, 21, and 28. Symptoms related to Kapha imbalance were documented using a structured case record form and graded on a standardized severity scale. Compliance and adverse events were monitored throughout the study period.

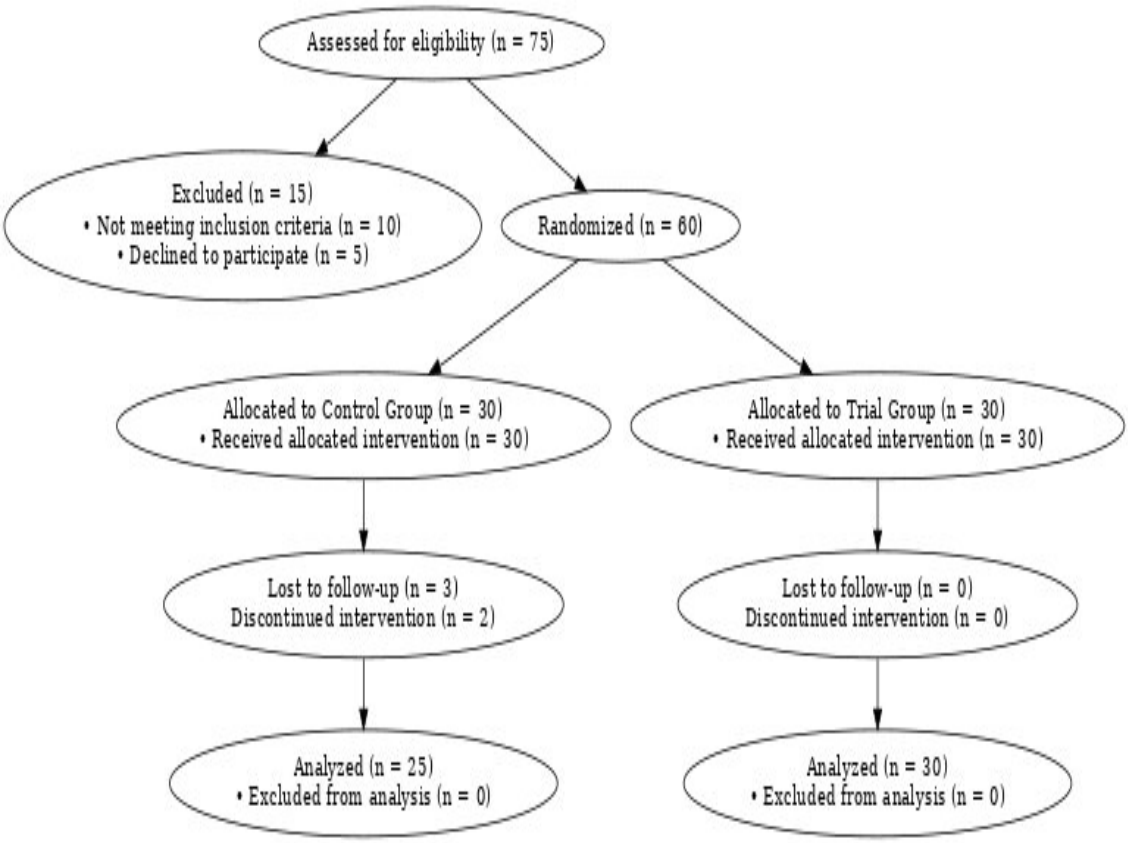

Fig no-2 CONSORT chart

Observation and Results

The present study evaluated the clinical efficacy of *Sunthi Siddha Jala* (dry ginger medicated water) in mitigating symptoms of *Kapha Vruddhi* (Kapha imbalance) during *Vasanta Rutu* (spring season), in comparison with normal water. Sixty volunteers were randomized into two groups: **Group A** received *Sunthi Siddha Jala* while **Group B** received plain potable water. Data were collected at baseline and during follow-up visits on the 3rd, 7th, 14th, 21st, and 28th days.

Symptom-wise Outcomes

Agnisadan (Loss of Appetite): Group A demonstrated marked improvement, with 69.77% of participants reporting normalized appetite by day 7, reaching 100% resolution by day 21. In contrast, Group B showed gradual improvement, with only 58.46% achieving normal hunger by day 21.

Prasek (Excessive Salivation): Significant improvement was noted in Group A, with 76.19% reduction by day 7 and complete resolution by day 14. Group B showed negligible improvement (15.79%) even by day 28.

Aalasya (Lethargy): By day 7, 79.59% of Group A reported freshness and energy, progressing to 100% by day 21. In Group B, only 49.18% reported relief by day 28.

Gaurav (Heaviness): In Group A, 73.77% felt relief by day 7, and all participants achieved complete resolution by day 21. In Group B, improvement was much slower, with only 52.56% reporting lightness by day 28.

Shaitya (Coldness): Group A showed rapid relief, with 95.65% reporting absence of coldness by day 7 and 100% by day 21. In Group B, the improvement plateaued at 74.36% by day 14, with no further progress thereafter.

Shlathangatwa (Weakness): In Group A, all participants achieved complete resolution of weakness by day 7, with sustained effect till day 28. Group B demonstrated slow and partial relief, reaching only 47.76% by day 28.

Shwas (Breathlessness): All participants in Group A experienced complete relief by day 7, whereas in Group B, improvement was gradual, reaching only 56.76% by day 28.

Kasa (Cough): In Group A, 95.24% achieved relief by day 7, with no recurrence during the study period. Group B showed slower recovery, with only 60.47% reporting relief by day 28.

Atinidra (Excessive Sleep): Group A exhibited rapid recovery, with 79.17% free of symptoms by day 7, and sustained results throughout. Group B showed only 40.63% improvement by day 28.

Duration of Upashaya (Relief)

In Group A, 60% of participants experienced symptomatic relief within 7 days, 36.67% within 14 days, and the remaining 3.33% within 21 days, with all participants achieving complete resolution by day 28. In contrast, Group B showed no complete recovery across any of the follow-up points.

Statistical Analysis

Comparative analysis using the **Mann-Whitney U Test** revealed statistically significant differences between Group A and Group B across all parameters ($p < 0.05$). The mean rank values for Group A were consistently higher than those for Group B, indicating superior efficacy of *Sunthi Siddha Jala*.

Summary of Findings

Overall, *Sunthi Siddha Jala* was found to be highly effective in reducing all the cardinal symptoms of *Kapha Vruddhi* including *agnisadan, prasek, aalasya, gaurav, shaitya, shlathangatwa, shwas, kas,* and *atinidra* in a significantly shorter duration compared to normal water. The results confirm the traditional description of *Sunthi Siddha Jala* as a Kapha-balancing intervention particularly suited for *Vasanta Rutu*.

During Vasant rutu (the spring season), the study examined the effectiveness of Sunthi Siddha Jala (dry ginger medicated water) in lowering symptoms of Kapha Vruddhi (increased Kapha) in comparison to normal water. Thirty volunteers from each of the two groups—Group A received Sunthi Siddha Jala while Group B received regular water—participated in the study. The following section presents symptom-wise observations, tabulated results, and graphical comparisons.

Table:10 Comparison of Symptom Relief between Group A (Sunthi Siddha Jala) and Group B (Normal Water) using Mann–Whitney U Test.

Symptom	Group	N	Effect %	Mean Rank	Sum of Ranks	Mann–Whitney U	P-Value
Agnisadan	Group A	30	69.77%	32.48	974.40	444.500	0.026
	Group B	30	61.54%	30.68	920.50		
Prasek	Group A	30	76.19%	33.43	1003.00	362.000	0.015
	Group B	30	15.79%	27.57	827.00		

Aalasya	Group A	30	73.77%	31.78	953.50	411.500	0.025
	Group B	30	52.56%	29.22	876.50		
Gaurav	Group A	30	73.77%	32.00	960.00	405.000	0.025
	Group B	30	52.56%	29.00	870.00		
Shaitya	Group A	30	95.65%	32.77	983.00	382.000	0.027
	Group B	30	74.36%	28.23	847.00		
Shlathangatwa	Group A	30	99.67%	31.90	957.00	408.000	0.025
	Group B	30	47.76%	29.10	873.00		
Shwas	Group A	30	99.89%	33.22	996.50	368.500	0.016
	Group B	30	56.76%	27.78	833.50		
Kasa	Group A	30	95.24%	31.63	949.00	416.000	0.026
	Group B	30	60.47%	29.37	881.00		
Atinidra	Group A	30	79.17%	33.17	995.00	370.000	0.018
	Group B	30	40.63%	27.83	835.00		

The present clinical study demonstrated that Sunthi Siddha Jala (dry ginger medicated water) is significantly more effective than plain water in alleviating symptoms of *Kapha vruddhi* during *Vasanta Rutu*. Symptoms such as *agnisadan* (loss of appetite), *praseka* (excessive salivation), *aalasya* (lethargy), *gaurav* (heaviness), *shaitya* (coldness), *shlathangatwa* (weakness), *shwas* (breathlessness), *kasa* (cough), and *atinidra* (excessive sleep) showed marked improvement in Group A (Sunthi Siddha Jala) compared to Group B (normal water), with statistically significant differences confirmed through the Mann-Whitney U test[19].

These findings align with classical Ayurvedic principles, wherein Sunthi (dry ginger) is described as *Laghu* (light), *Ruksha* (dry), *Katu rasa* (pungent taste), *Ushna virya* (hot potency), and *Katu vipaka* (pungent post-digestive effect)[20]. Such attributes counteract the qualities of aggravated Kapha—*guru* (heavy), *snigdha* (unctuous), *shita* (cold)—which become pronounced during *Vasanta Rutu*. Previous Ayurvedic literature has also emphasized the use of ginger formulations in seasonal regimens (*Rutucharya*) to maintain doshic balance[21].

From a biomedical perspective, ginger (*Zingiber officinale*) contains active constituents such as gingerols and shogaols, which possess anti-inflammatory, antioxidant, carminative, and thermogenic properties[22,23]. These compounds have been shown to stimulate gastric motility, improve appetite, reduce nausea, enhance thermogenesis, and exert mucolytic action on the respiratory tract[24,25]. Such pharmacological effects explain the significant reduction in symptoms like anorexia, excessive salivation, cough, and breathlessness in Group A. Previous clinical and experimental studies also confirm ginger's role in improving digestion, enhancing circulation, and relieving respiratory discomfort[26,27], which corroborates the present findings.

The strengths of the present study include its focus on *Rutucharya* (seasonal regimen)-based preventive intervention, the use of a classical preparation method as per *Sharangadhara Samhita*[28], and a structured clinical observation period across 28 days with multiple follow-up points (day 3, 7, 14, 21, 28). Importantly, all participants in the intervention group achieved complete remission of *Kapha vruddhi* symptoms by the end of the study, underscoring both clinical relevance and feasibility of Sunthi Siddha Jala as a household remedy.

However, limitations must be acknowledged. First, for the generalizability of the findings; larger randomized controlled trials are needed to confirm efficacy across diverse populations[29]. Second, the taste alteration of medicated water may affect compliance in long-term use, especially outside seasonal contexts[30]. Third, the absence of biochemical markers of digestion, metabolism, or respiratory function limits objective corroboration of clinical observations[31]. Additionally, the study did not evaluate potential adverse effects, though none were reported[32].

In summary, the findings suggest that Sunthi Siddha Jala provides symptomatic relief by balancing *Kapha dosha*, enhancing digestive fire (*Agni*), and restoring vitality during *Vasanta Rutu*. The results are consistent with both Ayurvedic theory and modern pharmacological evidence of ginger[33,34]. The intervention is safe, cost-effective, and accessible, making it a promising preventive strategy for seasonal Kapha aggravation.

Conclusion

The study concludes that seasonal variations play a crucial role in dosha equilibrium, with *Kapha* aggravation during *Vasanta Rutu* manifesting as appetite loss, lethargy, heaviness, coldness, and respiratory complaints. Sunthi Siddha Jala, being a classical yet simple and cost-effective preparation, significantly mitigates these symptoms compared to plain water. Since *Agnisadan* is considered the root cause of multiple pathologies, its timely correction through Sunthi Siddha Jala may prevent further disease progression. The findings establish Sunthi Siddha Jala as a safe, natural, and preventive therapy for Kapha vruddhi during seasonal transitions. Larger and longer trials are warranted to validate and expand these observations.

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