

# Clinical Study of *Maricha Kshaudra Yoga* in the Management of *Vataja kasa* (dry cough)

## Research Article

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## Abstract

One of the oldest holistic medicinal systems in the world is Ayurveda, which has explained comprehensive pathophysiology of different diseases along with its management. One of the most significant and typical respiratory conditions listed in Ayurveda is *Vataja kasa*. It is mainly characterized by *shushka kasa* (dry cough), *swarabheda* (hoarseness in voice), *kshinabala* (weakness), *hritshoola* (pain in the chest), *parshwashoola* (pain in flanks), *udarashoola* (pain in abdomen), *shirashoola* (headache), etc. Due to outside factors including population growth, contamination of the environment, industrialization, and urbanisation, it has a growing prevalence throughout time. It is one of the typical complaints and is also a symptom of many *Pranvah strotasa* (respiratory system) disorders. Classics of Ayurveda, has elaborately *Kasa* as a distinct disease with its diagnostic details and plan of management. Even though multiple options are there for its management, *Maricha kshaudra yoga*, prescribed by *Sushruta Samhita* was not yet tested. Therefore, an effort was made to research the effectiveness of *Maricha kshaudra yoga*, a trial medicine, in the treatment of *Vataja Kasa*. Data was collected on the first, seventh, and fourteenth days after the medicine was administered, and it was determined to have significant efficacy.

**Keywords:** *Vataja kasa*, *Shushka kasa*, Dry cough, *Maricha kshaudra yoga*, *Piper nigrum*.

## Introduction

One of the oldest holistic medicinal systems in the world is Ayurveda. (1) It serves both the maintenance of a healthy state of wellbeing and the treatment of disease. (2) The modern period has increased the stress in human life. *Kasa* (cough), a common respiratory disorder, is becoming more prevalent as a result of sedentary lifestyles and work conditions including contaminated air. A pathological disease called *Kasa* is one that is explained in many Ayurvedic classics. The respiratory system is in constant contact with the outside environment from birth until the end of one's life, making it particularly vulnerable to infections and the main victim of hyperactive sensitization in the majority of cases. The most common respiratory ailment sign is a cough, (3) and in mature cases, a chronic cough manifests as a recurring respiratory complaint. The mortal body is constantly influenced by environmental changes; the quality of life on the entire planet is deteriorating day by day due to pollution, population, industrialization,

and urbanisation. The quality of air, water, and food consumed does not always have a beneficial effect, and its chastity determines an individual's health. All of these variables have a poisonous effect on the natural body's essential protected system and fundamental health. The fact is that Ayurveda mentions the fundamental unit of natural exertion. Breathing is one of the distinct criteria of living exertion. One of the primary conditioning of respiratory system is air exchange; the speed of air exchange is to the tune of 16 times per nanosecond, making it one of the most vulnerable spots for complaint. (4) This issue is aggravated due to ultramodern lifestyle, which has resulted in industrialization and population growth. In accordance with Ayurveda *Dhooma* (different gases) and *Raja* (dust particles) are the primary causes of vitiation of *pranavaha srotodusthi* (respiratory system). (5) The descriptions in the classics regarding *Kasa* is easily associated with cough, and its pathophysiology corresponds exactly to the medium of cough reflex. (6) If it is not treated timely, it may produce another disease known as '*Kshaya*'. (7) *Kasa* is described in the Classics of Ayurveda as a unique ailment with its diagnostic information with management details. Although there are several solutions for managing it, the *Sushruta Samhita*'s suggested *Maricha kshaudra yoga* (8) has not yet been proven. The effectiveness of *Maricha kshaudra yoga*, a trial medication, in the treatment of *vataja kasa* was therefore investigated.

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**Aim:** To study the efficacy of *Maricha kshaudra yoga* in the management of *Vataja kasa*.

### Material and Methods

**Drug for Intervention:** Based on literary references from classics of Ayurveda, *Maricha kshaudra yoga* (9) for oral administration was provided for in the management of *Vataja kasa* in the present study.

Baseline assessment was done regarding all the subjects was done by initial screening (on 0<sup>th</sup> day) on the baseline parameters [*shushka kasa* (dry cough), *swarabheda* (hoarseness in voice), *kshinabala* (weakness), *hritshoola* (pain in the chest), *parshwashoola* (pain in flanks), *udarashoola* (pain in abdomen) and *shirashoola* (headache)]. Case record form was prepared incorporating the details of symptoms of *kasa* and it was recorded on 0<sup>th</sup> day, 7<sup>th</sup> day and 14<sup>th</sup> day.

- Study design: Prospective, non-comparative, open study.
- Study population: An accessible population of subjects from study city.
- Sample size: 40
- Sampling technique: Simple randomized sampling
- Dosage: 1 gram *Maricha* powder mixed with 1 gram of honey (one time dosage) - three times in a day.
- Duration of treatment: 14 days
- Follow up: After every 7 days
- Method of collection of Data: A specially prepared case record form containing details necessary for the study.

### Inclusion criteria

- Subjects having symptoms of diagnosed case of *Vataja kasa*.
- Subjects having age group between 30 - 60 years, irrespective of gender, any cast, income group and occupation.

### Exclusion criteria

- Subjects having known case of; or known history of COPD, chronic systematic diseases like diabetes mellitus, hypertension, hypothyroidism, etc.
- Major illness like tuberculosis, pneumonia, etc.
- Pregnant ladies and lactating ladies will be excluded.
- Immuno-compromised subjects such as cancer, AIDS, etc.
- Subjects on any other medication for *Kasa* or other systemic disorder.

### Withdrawal criteria

- Subjects willing to discontinue during trial.
- Subjects absent for two consecutive follow ups.
- Withdrawn subjects were replaced by the subject's fulfilling criteria of inclusion.

### Criteria of Assessment

On the basis of scoring pattern in symptoms of *Vataja kasa* viz. *shushka kasa* (dry cough), *swarabheda* (hoarseness in voice), *kshinabala* (weakness), *hritshoola* (pain in the chest), *parshwashoola* (pain in

the flanks), *udarashoola* (pain in the abdomen) and *shirashoola* (headache). The Gradation system used for the current study was as follows -

- A. *Kasa* (Recurrent paroxysms of dry cough):
  - 0 - Less than 5 Paroxysms of cough/ 24Hrs.
  - 1 - Greater than 5 Paroxysms of cough/ 24Hrs.
  - 2 - Greater than 10 Paroxysms of cough/ 24Hrs.
  - 3 - Continuous Paroxysms of cough/ 24Hrs altering daily routine work.
- B. *Swarabheda* (hoarseness):
  - 0 – Normal Voice
  - 1 – Diminished
  - 2 – Whispering (mimic)
  - 3 - Alteration of Voice
- C. *Kshinabala* (weakness)-
  - 0 – No weakness
  - 1 – Mild weakness (feeling fatigued twice or thrice a week)
  - 2 – Moderate weakness (feeling fatigued after few minutes or hours a day)
  - 3 - Severe weakness (feeling fatigued always)
- D. *Shoola (Pain)* will be assessed using VAS (Visual Assessment Scale) as described below -
 

The evaluation of overall alleviation using a 10-point scoring system, indicating "0" on the left and "10" on the right. "0" denotes total relief, while "10" denotes the worst condition. On Days 0, 7, and 14, subjects were asked to rate the severity of their illnesses. It was then evaluated using VAS.

  - a) *Hritshoola* (pain in the chest)
  - b) *Parshwashoola* (pain in the flanks)
  - c) *Udarashoola* (pain in the abdomen)
  - d) *Shirashoola* (headache)

Following was the grading scheme for those four pain symptoms -

- 0: No Pain
- 1-4: Minor: Present only during Coughing.
- 5-7: Moderate: Present intermittently irrespective of coughing; not affecting routine work.
- 8-10: Severe: Present intermittently irrespective of coughing; affecting normal routine work.

### Observations and Results

The observations recorded are presented in the tabulated form (Table No. 1 to 10 and Illustration No. 1 to 7).

**Table 1: Frequency distribution of subjects according to *Nidana* (causative factors) (10, 11)**

Sr.	<i>Nidana</i> (causative factors)	Frequency	Percent
1	<i>Rooksha ahara</i> (consumption)	31	77.5
2	<i>Kashaya rasa</i> (consumption of)	14	35
3	<i>Sheeta ahara</i> (consumption of)	25	62.5
4	<i>Asatmya ahara</i> (consumption)	21	52.5
5	<i>Dhooma sevana</i> (exposure to)	28	70
6	<i>Raja sevana</i> (exposure to dust)	12	30
7	<i>Shrama</i> (Excessive physical)	22	55
8	<i>Vega avarodha</i> (Suppression)	18	45
9	<i>Ratri jagarana</i> (staying awake)	20	50
10	<i>Ativyayama</i> (Excessive)	9	22.5

**Table 2: Distribution of subjects according to Prakriti (body type)**

Sr. No.	Prakriti (body type)	Frequency	Percentage
1	Pitta-kapha	4	10.0
2	Vata-kapha	28	70.0
3	Vata-pitta	8	20.0

**Table 3: Frequency distribution of subjects as per cardinal signs of Vataja kasa**

Sr.	Cardinal signs	Frequenc	Percentag
1	Shushka kasa (dry cough)	40	100
2	Swarabheda (hoarseness in voice)	39	97.50
3	Kshinabala (weakness)	31	77.50
4	Hritshoola (pain in the chest)	25	62.50
5	Parshwashoola (pain in flanks)	38	95.00
6	Udarashoola (pain in abdomen)	29	72.55
7	Shirashoola (headache)	39	97.50

**Table 4: Friedman Anova test regarding cardinal symptoms of Vataja kasa**

Sr. No.	Cardinal signs	Day	Mean Rank	Chi2	P value
1	Shushka kasa (dry cough)	Day 0	2.65	61.49	< 0.001
		Day 7	2.18		
		Day 14	1.18		
2	Swarabheda (hoarseness in voice)	Day 0	2.46	48.29	< 0.001
		Day 7	2.19		
		Day 14	1.35		
3	Kshinabala (weakness)	Day 0	2.41	37.5	< 0.001
		Day 7	2.09		
		Day 14	1.50		
4	Hritshoola (pain in the chest)	Day 0	2.28	26.08	< 0.001
		Day 7	2.08		
		Day 14	1.65		
5	Parshwashoola (pain in flanks)	Day 0	2.55	48.27	< 0.001
		Day 7	2.09		
		Day 14	1.36		
6	Udarashoola (pain in abdomen)	Day 0	2.40	39.92	< 0.001
		Day 7	2.14		
		Day 14	1.46		
7	Shirashoola (headache)	Day 0	2.55	55.69	< 0.001
		Day 7	2.20		
		Day 14	1.25		

**Table 5: Frequency distribution of subjects according to % of relief in Vataja kasa**

Sr. No.	Cardinal signs	Day 7	Day 14
1	Shushka kasa (dry cough)	16.16	46.46
2	Swarabheda (hoarseness in voice)	12.31	47.69
3	Kshinabala (weakness)	18.75	52.08
4	Hritshoola (pain in the chest)	15.00	45.00
5	Parshwashoola (pain in flanks)	18.07	44.58
6	Udarashoola (pain in abdomen)	16.36	54.55
7	Shirashoola (headache)	14.44	46.67

**Table 6: Aggravating factors of Vataja kasa**

Sr.	Aggravating factors	Frequency	Percentage
1	Dust	28	70
2	Smoke	16	40
3	Pollens	0	0
4	Climate	26	65
5	Cool food consumption	25	62.5

**Table 7: The frequency distribution of patients according to habits**

Sr.	Habit	Yes/No	Frequency	Percentage
1	Alcohol	No	27	67.5
		Yes	13	32.5
2	Tobacco	No	35	87.5
		Yes	5	12.5
3	Smoking	No	31	77.5
		Yes	9	22.5

**Table 8: Periodicity of Vataja kasa**

Sr. No.	Periodicity	Frequency	Percentage
1	Irregular	14	35.0
2	Seasonal	26	65.0

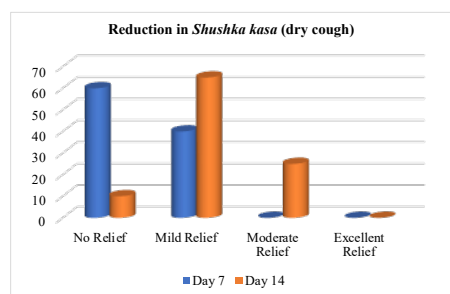
**Table 9: Occurrence of Vataja kasa**

Sr. No.	Occurrence	Frequency	Percentage
1	Night	14	62.5
2	Activity	26	52.5

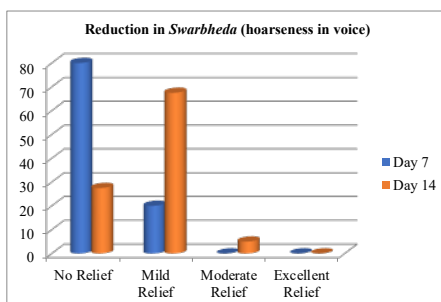
**Table 10: Mode of onset of Vataja kasa**

Sr. No.	Occurrence	Frequency	Percentage
1	Gradual	19	47.5
2	Sudden	21	52.5

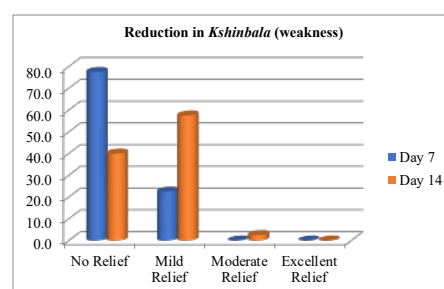
**Illustration 1: Reduction in Shushka kasa (dry cough)**



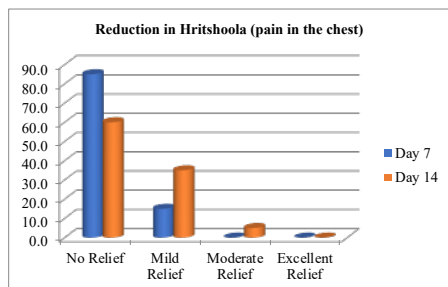
**Illustration 2: Reduction in Swarabheda (hoarseness in voice)**



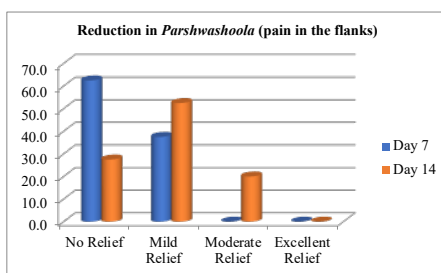
**Illustration 3: Reduction in Kshinabala (weakness)**



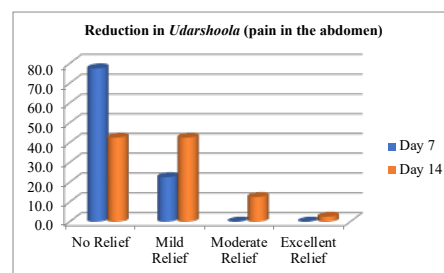
**Illustration 4: Reduction in *Hritshoola* (pain in the chest)**



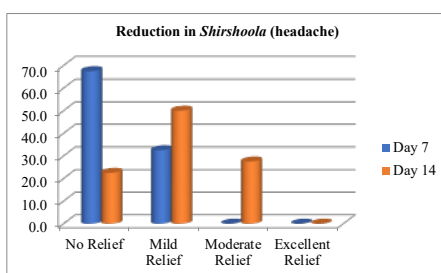
**Illustration 5: Reduction in *Parshwashoola* (pain in the flanks)**



**Illustration 6: Reduction in *Udarashoola* (pain in the abdomen)**



**Illustration 7: Reduction in *Shirashoola* (headache)**



## Discussion

According to *Acharya Charaka* (12) individual belonging to the age group of 30-60 years are mature. Whereas above age group of 60 years' adults belong to old age group where *Vata dosha* is any how predominant, which might make the study bias. Hence this age group was selected for the present study.

*Nidana* (causative factors): According to the current study, the highest percentages of patients who consumed dry food and were exposed to smoke, respectively, were 77.5% and 70% (Table 1).

*Prakriti* (body type): The majority of patients in this study, or 70%, were *Vatakapha Prakrutis*. This demonstrates the patients' preponderance of the *Vata dosha* (Table 2). Though it is *sukha sadhya vyadhi* (easily curable disease); (13, 14) improper food habit, unhygienic living condition may lead to reoccurrence of disease.

Frequency distribution of subjects as per cardinal signs of *Vataja kasa* (Table 3) - The maximum subjects were of symptoms *shushka kasa* (dry cough) and *shirashoola* (headache), each 39 % and *swarabheda* (hoarseness in voice) was of 38 %. The most prevalent symptoms were *shushka kasa* (dry cough) and *shirashoola* (headache) (39% each).

### Data Analysis:

The data collected was rendered to Master Chart and the tables were constructed.

Friedman Anova test was used as it is a non-parametric test to analyze the difference between 0<sup>th</sup> day, 7<sup>th</sup> day, 14<sup>th</sup> day in qualitative variables, such as *shushka kasa* (dry cough), *swarabheda* (hoarseness in voice) and *kshinabala* (weakness). For *Shoola* (Pain) symptoms - *hritshoola* (pain in the chest), *parshwashoola* (pain in the flanks), *udarashoola* (pain

in the abdomen) and *shirashoola* (headache) - were analysed by using VAS (Visual Assessment Scale).

Effect on cardinal symptoms of *Vataja kasa* (Table 4) -

- Shushka kasa* (dry cough) - In this study, mean rank of *kasa* on day 0<sup>th</sup> was 2.65, on 7<sup>th</sup> day was 2.18 and on 14<sup>th</sup> day it was 1.18. Here 'p' value of *kasa* was < 0.001 on 0<sup>th</sup>, 7<sup>th</sup> and 14<sup>th</sup> day which was significant.
- Swarabheda* (hoarseness in voice) - In the current study, the mean rank of *swarbheda* was 2.46 on day 0<sup>th</sup>, 2.19 on day 7<sup>th</sup>, and 1.35 on day 14<sup>th</sup>; the 'p' value of *swarbheda* on days 0<sup>th</sup>, 7<sup>th</sup>, and 14<sup>th</sup> was 0.001, which was significant.
- Kshinabala* (weakness) - The mean rank of *kshinbala* in the current study was 2.41 on day 0<sup>th</sup>, 2.09 on day 7<sup>th</sup>, and 1.50 on day 14<sup>th</sup>, with estimated 'p' values of *kshinbala* 0.001 on day 0<sup>th</sup>, 7<sup>th</sup>, and 14<sup>th</sup> that were significant.
- Hritshoola* (pain in the chest) - In this study, the mean *hritshoola* rank on days 0 through 7 was 2.28, 2.08, and 1.65, respectively, with a significant 'p' value of 0.001 for each of these days.
- Parshwashoola* (pain in the flanks) - The *parshwashoola*'s mean rank in this study was 2.55, 2.09, and 1.36 on days 0 through 14, with a *parshwashoola* 'p' value of 0.001 on each of those days, which was significant.
- Udarashoola* (pain in the abdomen) - In this study, the mean rank of the *udarashoola* was 2.40 on day 0, 2.14 on day 7, and 1.46 on day 14. 'p' value for *udarashoola* was significant at 0.001 on the first, seventh, and fourteenth days.
- Shirashoola* (headache) - *Shirashoola*'s mean rank in this study varied from 2.55 on day 0 to 2.20 on day 7 to 1.25 on day 14, with a significant 'p' value of *shirashoola* of 0.001 on each of those days.

As 'p' value for all seven cardinal symptoms of *vataja kasa* on 7<sup>th</sup> and 14<sup>th</sup> day was significant, it has revealed that the *Maricha-kshaudra yoga* was significantly effective.

Frequency distribution of subjects according to percentage of relief in *Vataja kasa* (Table 5) - According to the distribution of the 40 subjects, 16.16% of patients experienced *kasa* relief on day 7 and 46.46% of patients experienced *kasa* relief on day 14. On day 7, 12.31% of patients with *swarabheda* symptoms reported relief, and on day 14, 47.69% of patients reported relief. On the seventh day of the *kshinabala* symptom, 18.75% of patients reported relief, and on the fourteenth day, 52.08% of patients reported relief. 15% of individuals with *hritshoola* symptoms reported alleviation on day 7; by day 14, 45% of patients reported relief. On day 7, 18.07% of patients with *parshwashoola* symptoms reported alleviation, while on day 14, 44.58% of patients reported relief. On day 7, 16.36% of patients with *udarashoola* symptoms reported relief in *udarashoola*, while on day 14, 54.55% of patients reported relief in *udarashoola*. On day 7, 14.44% of patients with *shirashoola* symptoms reported alleviation, while on day 14, 46.67% of patients reported relief.

Aggravating factors (Table 6) - It was shown that the majority of patient's named dust (70%) and the weather (65%), as well as eating cold meals (62.5%) and smoking (40%) as exacerbating factors. The bronchial mucosa appears to be overly sensitive, according to the data above. This can be interpreted as *asatmya* (un-habitual) to environment and diet which produce *Vataja kasa*.

Habits (Table 7) - According to the distribution out of 40 patients, 13 patients (32.5%) had habit of alcohol drinking, 5 patients (37.5%) had habit of tobacco eating, and 9 patients (22.5%) habit of smoking. Patients with higher alcohol, tobacco, and smoking intake were more prevalent among those with *vataja kasa*. This could be as a result of the smoke perhaps increasing *Vata dosha*.

Periodicity (Table 8): Most of the patients in this study exhibit *vataja kasa* during the seasonal period (65%), whereas the remaining patients (35%) have irregular periodicity.

Occurrence (Table 9) - In the current study, most patients (62.5%) had more *Kasa vega* at night, and most patients (52.5%) had more *Kasa vega* during activity. This is most likely because the *Vata dosha* is aggravated due to cold atmosphere at night as compare to day and activities also increases *Vata dosha* as compare with resting stage.

Mode of onset (Table 10) - The majority of the patients in the current study (52.5%) presented with a sudden manner of onset. This may have been because the patients were first treated with *Vataja kasa*. The remaining patients' (47.5%) method of onset was gradual.

Symptom wise analysis:

For current clinical study, cardinal symptoms like *shushka kasa* (dry cough), *swarabheda* (hoarseness in voice), *kshinabala* (weakness), *hritshoola* (pain in the chest), *parshwashoola* (pain in flanks), *udarashoola* (pain in abdomen) and *shirashoola* (headache) of *Vataja kasa* were assessed and analysed the findings on the basis of observations recorded.

1. *Shushka kasa* (dry cough): On Day 7, 40% of patients experienced just minor alleviation, and 60% experienced no relief. On Day 7, 16.16% of patients felt better overall. In *Kasa*, on day 14, 25% of patients experienced Moderate relief, 65% experienced Mild relief, and 10% saw no alleviation (Illustration No. 1). On average, 46.46% of patients reported alleviation on the final follow-up day (day 14th). It is particularly significant that the Mean on days 0, 7, and 14 is 2.65, 2.18, and 1.18, respectively. This is probably due to the *ushna* (hot) property of *Maricha* (15, 16, 17, 18) and *Yogavahi* (bioenhancer) property of honey (19, 20, 21) might have reduced the dryness of *Vata* based on *Samaanya vishesha* theory, (22, 23) by this means reduced the symptom possibly. Cough reduction is a honey characteristic. (24, 25, 26)
2. *Swarabheda* (hoarseness in voice): On day 7, 20% of patients reported just minor improvement, while 80% reported no relief at all. On day 7, 12.31% of patients overall reported alleviation. In *Swarabheda*, on day 14, 5% of patients reported moderate relief, 67.5% reported light relief, and 25% reported no relief. On the final follow-up day, 47.69% of patients reported relief overall (day 14th). Day 0, Day 7, and Day 14's respective means are 2.46, 2.19, and 1.35, which is highly significant (Illustration No. 2). This is probably being due the *ushna* (hot) property of *Maricha* might have given smoothening effect to throat region and honey has *swarya* (27, 28) (good for voice) property thereby reduced the *Swarabheda*.
3. *Kshinabala* (weakness): On Day 7, 22.5% of patients reported some improvement, while 77.5% reported no relief. On Day 7, 18.75% of patients in total reported alleviation. On day 14, 2.5% of weakness patients reported moderate relief, 57.5% reported mild relief, and 40% reported no alleviation. On the final follow-up day, 52.08% of patients reported relief overall (day 14th). Day 0, Day 7, and Day 14's respective means are 2.41, 2.09, and 1.50, which is highly significant (Illustration No. 3). This is most likely caused by the patient feeling better and coughing less frequently, as well as an increase in *bala* (strength).
4. *Hritshoola* (pain in the chest): On day 7, 15% of patients reported just minor improvement, while 85% reported no relief at all. On day 7, 15% of patients in total reported alleviation. 60% of patients had no relief in *hritshoola* on day 14, 35% had light relief, and 5% had moderate relief. Overall, 45% of patients reported alleviation on the final follow-up day (day 14th). Day 0, Day 7, and

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- Day 14 had respective means of 2.28, 2.08, and 1.65, which is highly significant (Illustration No. 4).
5. *Parshwaashoola* (pain in flanks): On day 7, 37.5% of patients reported just minor improvement, while 62.5% reported no relief at all. On day 14, 18.07% of patients felt better overall. In *parshwaashoola*, on day 14, 20% of patients reported moderate relief, 52.5 percent reported mild relief, and 27.5 percent reported no relief. On the final day of follow-up, 44.58% of patients experienced relief overall (day 14th). The mean on days 0 through 7 and 14 is, respectively, 2.55, 2.09, and 1.36, which is highly significant (Illustration No. 5).
  6. *Udarashoola* (pain in abdomen): On day 7, 22.5% of patients reported just minor improvement, while 77.5 percent reported no relief at all. On day 7, 16.36% of patients in total reported alleviation. In *udarashoola*, on day 14, 2.5% of patients reported great relief, 12.5% reported moderate relief, 42.5% reported light relief, and 42.5% reported no relief. On the final follow-up day, 54.55% of patients reported relief overall (Day 14th). Day 0, Day 7, and Day 14's respective means are 2.40, 2.14, and 1.46, respectively, which is highly significant (Illustration No. 6).
  7. *Shirashoola* (headache): On Day 7, 32.5% of patients reported some degree of relief, whereas 67.5% reported no improvement at all. On Day 7, 14.44% of patients felt better overall. In *shirashoola*, on day 14, 27.5% of patients reported moderate relief, 50% reported mild relief, and 22.5% reported no relief. On the final follow-up day, 46.67% of patients reported relief overall (Day 14th). The very significant mean for Days 0, 7, and 14 is 2.55, 2.20, and 1.25, respectively (Illustration No. 7). In present clinical study for the cardinal signs *hritashoola*, *parshwaashoola*, *udarashoola* and *shirashoola* are concerned with *shoola* (pain). As per Ayurveda, the pain is never without vitiation of *vata dosha*. The *ushna* (hot) property, *vata* reducing property of *Maricha* and *shoola prashaman mahakashay dravya* (29) (group of pain reducing drugs) might have reduced the *Vata* based on '*Samaanya vishesha*' theory and this was the probable mode of action to reduce the pain symptom. In the present study, we found that practising *Maricha kshaudra yoga* has significantly reduced *Vataja kasa's* signs and symptoms. By virtue of its *Shoolahara* (pain reducing) property, it will successfully have alleviated the negative effects of coughing on the flanks and chest. *Maricha* and honey have *Kapahghna* (reducing *kapha dosha*) in their natural state, which might be useful to get relief in the symptoms.

**Mode of action of Maricha Kshaudra Yoga**

Ayurveda has described the pharmacological properties like *Katu rasa*; *Laghu*, *Teekshna* and *Ruksha Gunas*; *Ushna Veerya*; *Katu Vipaka*; and *Vata-Kapha Shamak* of *Maricha* (30). *Kshaudra (Madhu)* due to its *prabhava* and *yogavahi* assumes magnifies *gunas* of whatever *dravya* it is along with it. Hence, *kshaudra* is

used along with most of the medicines of Ayurveda as adjuvant. *Bhavaprakasha* has mentioned its use in *Kasa* (31), while *Sushruta* has explained its *Vata* and *Pitta - shamak* effect due to its *Picchila*, *Madhura* and *Kashaya* properties (32). *Maricha (Piper nigrum L.)* fruits are highly valued therapeutic agent that heals many ailments including asthma, cold and respiratory problems (33). It contains different piperine combination which have shown significant antitussive effect in guinea pigs (33). *Sushka Kasa* (dry cough) is reduced probably due to the *ushna* (hot) property of *Maricha* (15, 16, 17, 18) and *Yogavahi* (bioenhancer) property of honey (19, 20, 21) might have reduced the dryness of *Vata* based on *Samaanya vishesha* theory, (22, 23) and cough reduction is a honey characteristic (24, 25, 26). *Swarabheda* (hoarseness in voice) was decreases due the *ushna* (hot) property of *Maricha* might have given smoothening effect to throat region and honey has *swarya* (27, 28) (good for voice) property. *Kshinabala* (weakness) symptom was also shown positive results most likely caused by the patient feeling better and coughing less frequently, as well as an increase in *bala* (strength). In present clinical study for the cardinal signs *hritashoola*, *parshwaashoola*, *udarashoola* and *shirashoola* are concerned with *shoola* (pain). As per Ayurveda, the pain is never without vitiation of *vata dosha*. The *ushna* (hot) property, *vata* reducing property of *Maricha* and *shoola prashaman mahakashay dravya* (29) (group of pain reducing drugs) might have reduced the *Vata* based on '*Samaanya vishesha*' theory and this was the probable mode of action to reduce the pain symptom. In the present study, we found that practising *Maricha kshaudra yoga* has significantly reduced *Vataja kasa's* signs and symptoms. By virtue of its *Shoolahara* (pain reducing) property, it will successfully have alleviated the negative effects of coughing on the flanks and chest. *Maricha* and honey have *Kapahghna* (reducing *kapha dosha*) in their natural state, which might be useful to get relief in the symptoms. Thus, *Maricha kshaudra yoga* was shown good results in present study.

**Conclusion**

According to statistics and clinical studies, *Maricha kshaudra yoga* is significantly effective for *Samprapti vighatana* (performing the breakdown of pathology) of *Vataja kasa*. The qualities of the formula such as *ushna* (hot), *vata-anulomaka* (making natural flow of *vata dosha*), and *Vatakaphaghna* (balancing *vata* and *kapha dosha*), which may be significantly effective in the management of *Vataja kasa*. There is need of future study with a larger sample size to know more facts.

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