



A Systematic Review on Therapeutic Potential of *Shwaskuthara Rasa*

Paymalle L¹ and Wadnerwar N^{2*}

¹PhD Scholar, Dept of Agadtantra, Mahatma Gandhi Ayurved College Hospital and Research Centre, Salod [Hirapur], Datta Meghe Institute of Medical Sciences [Deemed to be University], Wardha; Assistant Professor, Dept of Agadtantra, Gurukunj Ayurved College, Mozari, Dist. Amaravati, Maharashtra, India

²HOD and Associate Professor, Dept of Agadtantra, Mahatma Gandhi Ayurved College Hospital and Research Centre, Salod [Hirapur], Datta Meghe Institute of Medical Sciences [Deemed to be University], Wardha, Maharashtra, India

***Corresponding author:** Nilima Wadnerwar, Department of Agadtantra, Mahatma Gandhi Ayurved College Hospital and Research Centre, Salod [Hirapur], Datta Meghe Institute of Medical Sciences [Deemed to be University], Wardha, Maharashtra, India, Tel: 8275399319; Email: dr.nilima_wadnerwar@rediffmail.com

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Abstract

Herbomineral formulations in Ayurved are known for their potency in fewer doses. *Shwaskuthara Rasa* is one of the herbomineral formulations used very widely in practice. The systematic study was planned to explore the therapeutic potential of the *Shwaskuthara Rasa* based on Ayurvedic and contemporary assessment parameters from the clinical researches conducted previously with the help of various database. To review the clinical effects of *Shwaskuthara Rasa* in different diseases based on different assessment parameters, exact dose, duration, Anupana (vehicle) and its safety, the articles published in PubMed, Google scholar, Google and ClinicalTrials.gov database and AYUSH online research portal were searched, collected, segregated, analyzed and interpreted. It was observed that *Shwaskuthara Rasa* is safe and efficacious as a single as well as an adjuvant therapy. But the evidences are scanty to establish the clinical potential of *Shwaskuthara Rasa* as only seven researches are available with less sample size. Hence, studies are recommended in larger samples in comparison with the standard line of treatment in mild, moderate and severe cases so that it may be useful in emergency condition to treat attacks of Asthma.

Keywords: Shwasakuthara Rasa; *Tamak shwasa*; Asthma; Herbomineral Formulation

Aim

The aim of the present study is to collect the scientific evidences proving the therapeutic efficacy of *Shwaskuthara Rasa* in different diseases.

Objective

To review the clinical efficacy of *Shwaskuthara Rasa* in different diseases based on different assessment parameters,

exact dose, duration, Anupana (vehicle) and its safety.

Introduction

Ayurved is the one of the oldest and most widely practiced Indian system of medicine. According to WHO, up to 80% of the world's population relies on traditional medicine for their health care needs with, 35% of developed countries populations reporting use of complementary and alternative medicines [1-3]. Ayurveda mainly aims to

improve health through the use of effective rejuvenators, through proper diet and good quality medicine (Ayurvedic formulations). For this purpose Ayurveda has chosen all possible *dravyas* (materials) from three natural resources i.e. herbal, mineral and animal origin. Sometimes *visha dravyas* (Poisons) are also mentioned in Ayurvedic formulation. In Ayurvedic classics after proper *shodhana* (processing), many *visha dravyas* are used as *Aushadha Dravya*. According to Ayurved, *shodhana* is not only the process of detoxification, but also a process of *samskara* potentiating the therapeutic efficacy). *Visha* having following *gunas* (properties) like, *Laghu*, *Ruksha*, *Ashu*, *Vishada*, *Vyavayi*, *Tikshna*, *Vikasi*, *Sukshma*, *Ushna* and *Anirdeshya rasa* [4].

According to Rasashastra, metals are prescribed in formulation with minimal doses because they are readily absorbable, adaptable, and non-toxic due to their ability to act as a catalyst, increasing metabolism at a cellular level, capacity for targeted and controlled drug delivery and immuno modulatory quality [5]. There are so many formulations given in classical texts which contain combination of vegetable poison, metals and minerals. Mercury, lead, Arsenic and Copper are the most widely used heavy metals for drug preparation in Ayurveda.

One of the herbomineral formulations *Shwaskuthara Rasa*, contains Purified Vatsanabha (*Aconitum ferox* Linn), Purified Parada (Mercury), Purified Gandhaka (Sulphur), Tankana (Borax), Purified Manahsila (Arsenic disulfide), Pippali (*Piper longum* Linn), Marich (*Piper nigrum* Linn), Shunthi (*Zingiber officinalis* Linn), It is one of the reputed Ayurvedic preparation mentioned in classical texts for the treatment of Cold, Asthma, Bronchitis, Anorexia, indigestion. According to Yogratanakar, *Shwaskuthara Rasa* is used in *Kasa*, *Shwasa*, *Mandagni* and diseases of *Vat* and *kapha pradhan dosha dushti* [6]. Review of literature revealed that *Shwaskuthara Rasa*, apart from treating asthma and allergy, is used for the cure of cough, laryngitis, tuberculosis, unconsciousness, mental disorders, coma, chest burn, and heart diseases [7].

Shwaskuthara Rasa is a *khalveeya Rasayana* mentioned in almost all classical texts. *Shwaskuthara Rasa*, *Maha Shwasakuthara Rasa*, *Bruhat Shwasakuthara Rasa* and *Shwasari Rasa* are the different names assigned to it. The Ingredients remain same in all texts, but the quantity of *Maricha*, *Pippali* and *Shunthi* varies from text to text. *Maricha* considered as a chief ingredient in maximum texts which varies from one part to ten parts. *Pippali* (*Piper longum* L), *Shunthi* (*Gingiber officinale* L), varies from one part each to six parts each. This is the safe and effective formulations indicated for *Shwasa* and *Kasa*. The name itself indicates that it is strong like an axe which eliminates the *Shwasa vyadhi* completely. The dose of *Shwaskuthara Rasa* varies from ½

Gunja (60mg) to 5 *Gunja* (600mg).

Most of the researches are conducted on pharmaceutical standardization of *Shwaskuthara Rasa* [8-10]. Among them, *Shwaskuthara Rasa* prepared by adding 8 parts of *Maricha* one by one showed increase in Piperine % and proved to be efficacious in low dose. Even it was proved more effective in protecting against histamine induced bronchospasm in experimental animal model. It has increased bioavailability to mercury and is found more efficacious in controlling the signs and symptoms of *Shwasa*. The formulation was found safe in acute and subacute toxicity studies [11]. It was proved effective against only three strains of *Staphylococcus aureus* [12]. Antitussive action of *Shwaskuthara Rasa* is proved in animal model [13]. The present study was planned to explore the therapeutic potential of the *Shwaskuthara Rasa* based on Ayurvedic and contemporary assessment parameters from the clinical researches conducted previously with the help of various database.

Materials and Methods

The articles published in PubMed, Google scholar, Google and ClinicalTrials.gov database and AYUSH online research portal were searched for this article with print journals, periodicals and reports. The key words used for database search were "Asthma and *Shwaskuthara Rasa*", "Cancer and *Shwaskuthara Rasa*" and "clinical study of *Shwaskuthara Rasa*".

Eligibility Criteria:

- Eligible study type:** Clinical trial study. Pharmacological and animal studies were excluded.
- Eligible study participants:** individuals of any age, gender or nationality.
- Eligible study interventions:** *Shwaskuthara Rasa*.
- Type of outcome measures:** Efficacy of *Shwaskuthara Rasa* in any disease.

Observation

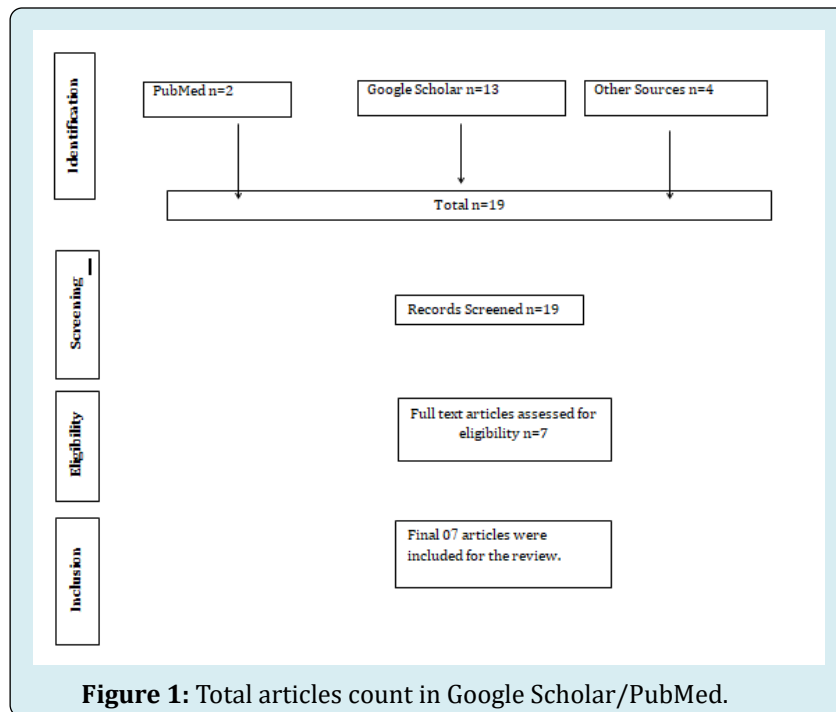
This search process for systemic review was done as per "preferred Reporting Items for Systemic Review and Meta-Analysis guidelines". All selected articles were screened finally by reading available matter and analyzed further.

Results and Discussion

19 research articles related with *Shwaskuthara Rasa* were identified. 2 research papers were published in Pubmed journals out of which only one article was selected as it was related with clinical study of *Shwaskuthara Rasa*. Total 13 papers were published in Google scholar journals, out of which only 3 articles were selected as they fulfill the

selection criteria. 4 research articles were published in other sources like online publishing media out of which 2 articles

were selected for analysis. So at the end of screening 07 articles were selected for further analysis (Figure 1).



Role of *Shwaskuthara Rasa* in the Management of *Tamaka shwasa*

Jadav R, et al. [14] evaluated 20 patients of *Tamaka shwasa* within the age group of 18 to 60 years fulfilling the inclusion criteria and treated the patients with dose of 250mg of *Shwaskuthar rasa* with honey, three times a days after food for the period of 6 weeks. After study period they concluded that *Shwaskuthar rasa* showed 58.80% good result on signs and symptoms of *Tamaka shwas* and *Shwaskuthar rasa* was effective in *Kapha pradhana samprapti* [8]. As ingredients of *Shwaskuthar rasa* are *Vat-Kaphashamak* in nature with *laghu*, *ruksha* and *ushna guna*, it mostly acts on *kapha dosha pradhan samprapti* and due to its *guna* it is contraindicated in *Pitta Pradhan samprapti*. Decrease in AEC was statistically significant. ($p < 0.01$). There was an increase in the PEFR by 32.50% increase in AEC by 16.77%. Effect on other Hematocrits showed that ESR (14.27% ↓) and TLC (1.07% ↓) showed very good result on which was statistically significant, may be better in inflammatory condition.

Jadav R, et al. [15] in another study evaluated the effect of *Shunthyadi Churna* and compared it with *Shwaskuthar rasa* in the management of *Tamaka shwasa* with respect to Bronchial asthma. They evaluated total 46 patients (23 in each group) of *Tamaka shwasa* between the age group of 18 to 60 years, fulfilling the inclusion criteria and patients selected randomly and assigned to group. After study, they

concluded that *Shunthyadi churma* and *Shwaskuthara Rasa* shows 60.74% and 58.80% good results respectively in signs and symptoms of *Tamaka shwasa*. But it was assumed that *Sunthyadi churna* had better effect in *Vata pradhana samprapti* while *Shwaskuthar rasa* had better effect in *kapha pradhana samprapti* [9].

In the study of comparative effect of *Shwaskuthara Rasa* and *Shirishadi Kashaya* in the patients of *Tamaka shwasa*, total 30 patients satisfying inclusion criteria were selected and randomly put into two groups. One group was treated with *Shwaskuthar rasa* in the dose of 250mg BD per day with boiled and cooled water, while another group was treated with *Shirishadi Kashaya* in the dose of 25ml BD per day for the (a) period of 42 days. They concluded that both the drugs were effective on dyspnea and cough, day of Asthma per week, frequency of asthmatic attacks per week and vital capacity of lungs. But *Shirishadi Kashaya* has significant effect on dyspnea and cough ($P < 0.01$), significant reduction in days of Asthma per week ($P < 0.05$) and highly significant in rising vital capacity ($P < 0.001$) than *Shwaskuthara Rasa* [10]. As *Tamaka shwasa* is chronic disease and incurable in nature as per Ayurvedic principles it should be treated for longer duration and current study was done only for 42 days. So study for longer duration treatment is required for assessment of detail efficacy of *Shwaskuthar rasa* in *Tamaka shwas*. And also this study was done only on uncomplicated cases of *Tamaka shwas*, so use of *Shwaskuthara Rasa* in

complicated patient not assessed in this study.

Nephrotoxicity Study in Children

Shinde RV et al evaluated whether *Rasaashadhi* (Herbomineral formulations) causes nephrotoxicity in children or not. For this study they used five herbomineral drugs (one of the drug is *Shwaskuthara Rasa*) regimen in recurrent and reactive respiratory illness in children of age 4 to 14 years for 45 days at 15 days interval. To rule out Nephrotoxicity after use of Ayurvedic Herbomineral formulations, Kidney function test was done. Total 13 patient's case series was observed. After study they concluded that the use of Ayurvedic herbomineral medicines in pediatrics patients was safe and there was no relation with nephrotoxicity or any obstructive renal pathology when used properly [11]. Use of herbomineral drugs in treatment always remains a most controversial issue not only in India but also in Western countries. The age group of this study was 4 to 14 years. The researcher did not found any toxic effect on the patients that means proper use of drugs which are properly processed as per Ayurvedic principles are safe in pediatrics

age group also. But the sample size of this study was so small so as to confirm the safety of herbomineral formulations like *Shwaskuthara Rasa*. A longitudinal study in large sample is required.

Cancer and *Shwaskuthara Rasa*

Three case reports published by Bendale Y, et al. They used Ayurvedic principle of *Rasayana* therapies along with other medication (one of the interventional drug was *Shwaskuthara Rasa*) and they found good response in cancer patients [16-18]. In these case reports, main interventional medicine is *Rasayana* therapy containing *Swarna bhasma*, *Hiraka bhasma*, *Rajat bhasma* and *Abhraka bhasma* etc along with this other formulae mentioned in respiratory system diseases like *Aarogyawardhini*, *Tribhuvankirti rasa*, *Shwaskuthara Rasa* etc. were used. So due to the combine effect of all these drugs, cancerous growth may have been reduced. That's why it is recommended that the studies with single *Shwaskuthara Rasa* should be done to assess efficacy in cancer.

Study design	Sample Size	Age group (Yrs)	Dose	Duration	Anupana	Assessment parameters
Non Randomized clinical trial	20	18- 60	250 mg TDS after meals	6 weeks	Honey	CBC with Absolute Eosinophil count, PEFr, symptoms of <i>Tamaka shwasa</i> and cardinal symptoms of Bronchial asthma
Randomized controlled clinical trial	46 (23 in each group)	18- 60	250 mg TDS after meals	6 weeks	Honey	CBC with Absolute Eosinophil count, PEFr, symptoms of <i>Tamaka shwasa</i> and cardinal symptoms of Bronchial asthma
Randomized controlled clinical trial	30 (15 in each group)		250 mg BD after meals	6 weeks	boiled and cooled water	Vital capacity of lungs, dyspnoea, cough, days of asthma per week, frequency of asthmatic attacks
Case series	13	14-Apr	Variable As per weight	45 days	Honey	KFT
Case reports	3	50 - 77	250 mg BD	variable	water	CT scan

Table 1: Summarizing the interventional studies with *Shwaskuthara Rasa*.

From the scientific evidences collected in the study, it can be inferred that the evidences are scanty to establish the clinical potential of *Shwaskuthara Rasa*. The drug is studied as main drug only in *Tamak shwasa*. Less sample size and selection of only mild and moderate cases of *Shwasa vyadhi* are found to be some obstacles in the pathway of establishing the efficacy of *Shwaskuthara Rasa* [19]. The effect of the drug can also be assessed on oxygen saturation and arterial blood gases along with lung parameters in all mild, moderate and severe cases of *Tamaka shwasa*. Hence, the safety and

efficacy of *Shwaskuthara Rasa* should be assessed in larger samples along with comparison with the standard line of treatment. Effect of *Shwaskuthara Rasa* as an adjuvant drug in Squamous Cell Carcinoma of lungs, larynx and stage I Nodular Lymphocyte Predominant Hodgkin Lymphoma (NLPHL) has added a feather of appreciation to the Ayurvedic treatment. Piperine present in Marich enhances the bioavailability of the *Shwaskuthara Rasa* [20]. It may be useful in emergency condition to treat attacks of Asthma. If it is established scientifically, it can also be used to treat the

respiratory distress due to COVID 2019.

Conclusion

Shwaskuthara Rasa is one of the reputed herbomineral formulations described in various classical text of Ayurved. Classically the drug is used in diseases related with respiratory system like Asthma, Bronchitis, cough, dyspnea etc.

Though it is mentioned in number of classical texts but clinically on the ground of contemporary parameters, the efficacy of *Shwaskuthara Rasa* is not assessed as very little clinical research work is done. *Shwaskuthar rasa* contain heavy metals like mercury and arsenic so must be used after proper *shodhana* process and with prescribed dose. In our study we found some research work, which describes *Shwaskuthar rasa* is useful in cancer treatment also. So we conclude that there is a need of some more clinical research with larger sample size to prove the efficacy of *Shwaskuthara Rasa*.

Conflict Of Interest: No conflicts of interest.

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