

Critical Review of *Shwasakuthara Rasa* – A Herbomineral Formulation

Review Article

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Abstract

Shwasakuthara Rasa (SKR) is a well known herbo-mineral formulation indicated in all kinds of *Shwasa* and *Kasa*. It is a *Khalveeya Rasayana*. In different classics SKR has been present with different composition. **Aims and Objectives:** In current attempt all references were compiled and studied in terms of their composition, method of preparation, dose, adjuvants and indications and contribution of various texts regarding these formulations. **Materials and Methods:** References of SKR were collected from various available classical texts, some dissertations, and articles from various journals were also reviewed in this attempt. **Results:** *Shwasakuthara Rasa*, *Prathama Shwasakuthara Rasa*, *Dwiteeya Shwasakuthara Rasa*, *Maha Shwasakuthara Rasa*, *Bruhat Shwasakuthara Rasa*, *Shwasari Rasa* are the different names given to it. In all these formulations the ingredients remains the same, but the quantity of *Maricha* varies from one part to ten parts and *Pippali*, *Shunti* varies from one part to six parts each. **Conclusion:** SKR is first time mentioned in *Rasendra Sara Sangraha* of 15th century AD. *Shwasakuthara Rasa* is the name given in maximum texts which is *Sagandha*, *Niragni Khalveeya rasa yoga* having *Maricha* as a chief ingredient in maximum references.

Keywords: *Khalveeya Rasayana*, *Maricha* (*Piper nigrum L.*) *Shwasakuthara rasa*.

Introduction:

Diseases of the respiratory system account for up to a third of death in most countries and the major proportion of visits to the doctor. (1) Asthma is a common, chronic inflammatory disorder of the airways, associated with pronounced health and economic consequences. (2) It has been identified as one of the five pressing global lung problems, (3) affecting about 300 million people worldwide and 1-18% of population in different countries. (4) It could increase further by another 100 million by year 2025. (5) The available treatment in modern medical science like bronchodilators, steroids even in the form of inhalers have success in providing instant symptomatic relief in Bronchial asthma. But there is recurrent acute exacerbation and remissions and treatment has many side effects like nausea, vomiting, tremor, hoarseness of voice and disturbances in hypothalamo-pituitary-adrenal axis. (6)

The disease Bronchial Asthma is comparable with *Tamaka Shwasa* type of *Shwasa Roga* in *Ayurveda*. (7) *Ayurveda* prefers a number of formulations to treat *Tamaka Shwasa*, which includes herbal, herbo-mineral and metallic preparations. *Rasashastra* has a treasure of medicines for *Shwasa*. *Bhasmas* like *Abhraka*, *Godanti*, *Shankha*; *Khalveeya Rasayanas* like *Shwasakasachintamani Rasa*, *Shwasakuthara Rasa*, *Chandramruta Rasa*; *Kupipakwa Rasayanas* like *Rasasindhoora*, *Mallasindhoora*; *Pottali Rasayanas* like *Hemagarbha Pottali*, *Shilagarbha Pottali*, *Talagarbha Pottali* have shown their very good results in different conditions of *Shwasa*. Among these, *Khalveeya Rasayana* are most commonly used preparations as they are easily prepared by mixing herbal and mineral drugs in specified proportions and levigating with different liquid media. SKR is a commonly prescribed *Khalveeya Rasayana* indicated in different conditions of *Shwasa*, *Kasa*, *Rajyakshma* etc. Thus the present study is an attempt to go through various classical references of SKR in order to have comparative better understanding of this formulation.

Materials and Methods:

References of SKR were collected from various available classical texts of *Ayurveda*, some dissertations and articles from various journals were also reviewed in this attempt. These collected materials are orderly tabulated and critically reviewed.

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Observations and Results:

Types of SKR:

SKR as the name itself indicates that it is the mercurial preparation which acts as an axe to *Shwasa roga* that helps in eliminating the disease *Shwasa* from its root. It is first explained in *Rasendra Sara Sangraha* in 15th century. There are three references of SKR as *Prathama*, *Dwiteeya* and *Triteeya*. (8,9,10) followed by *Bhava prakasha* explained two references of *Shwasakuthara Rasa* one under *Jwara roga Adhikara* (11) and another under *Shwasa roga*. (12) *Yoga Ratnakara* explained a unique method in the preparation of *Shwasakuthara Rasa* to add *Maricha* one by one (*Ekaikam Maricham datva*). (13) *Rasa Kamadhenu* (14) followed *Yoga Ratnakara*. *Bhaishajya Ratnavali* mentioned two types *Prathama* (15) and *Dwiteeya Shwasakuthara Rasa*. (16) *Prathama Shwasakuthara Rasa* is similar with *Dwiteeya* SKR of *Rasendra Sara Sangraha*, where as *Dwiteeya* SKR is similar to *Triteeya* SKR of *Rasendra Sara Sangraha* but quantity of *Maricha* vary from 7 parts to 8 parts. *Rasendra Sambhava* mentioned two varieties of SKR 1st

(17) similar with *Dwiteeya* SKR of *Rasendra Sara Sangraha* and second reference is similar with *Triteeya* SKR of *Rasendra Sara Sangraha* coined the term *Bruhat Shwasakuthara Rasa*, (18) where as *Rasajalanidhi* mentioned two varieties of SKR, 1st reference (19) is similar with *Dwiteeya* SKR of *Rasendra Sara Sangraha* and 2nd reference is similar with *Dwiteeya* SKR of *Bhaishajya Ratnavali* coined the term *Maha Shwasakuthara Rasa* (20). *Rasa Chandamshu* coated two varieties of *Shwasakuthara Rasa* 1st SKR (21) is similar with *Prathama* SKR of *Rasendra Sara Sangraha* and second reference called as *Dwiteeya* (22) SKR similar with *Triteeya* SKR of *Rasendra Sara Sangraha*. *Bruhat Rasaraja Sundara* mentioned three (23-25) types of SKR which are similar with three types of SKR mentioned in *Rasendra Sara Sangraha* and one *Shwasari Rasa* which is very similar with SKR. *Rasayoga Sagara* (26) mentioned only one type of SKR of *Yoga Ratnakara*, other three varieties are mentioned in the commentary. *Bharata Bhaishajya Ratnakara* explained three references, two as SKR (27,28) and one *Shwasari Rasa* (29) of *Bruhat Rasaraja Sundara*. AFI followed the

Table 1: Showing names of *Shwasakuthara Rasa* from various texts

	RSS	BP	YR	RKD	BR	RS	RJN	RC	BRRS	RYS	BBR	AFI
SKR		+	+	+		+	+	+	+	+	+	+
Prathama SKR	+				+							
Dwiteeya SKR	+				+			+				
Triteeya SKR	+											
Maha SKR							+					
Bruhat SKR						+						
Shwasari Rasa									+		+	

RSS – *Rasendra Sara Sangraha*, BP – *Bhava Prakasha*, RKD – *Rasa Kamadenu*, YR – *Yoga Ratnakara*, BR- *Bhaishajya Ratnavali*, R S – *Rasendra Sambhava*, RJN – *Rasa Jala Nidhi*, RC- *Rasa Chandamshu*, BRRS – *Bruhat Rasa Raja Sundara*, RYS – *Rasa Yoga Sagara*, BBR – *Bharata Bhaishajya Ratnakara*, AFI – *Ayurvedic Formulary of India*.

Formulation composition:

All classical texts mentioned eight ingredients in *Shwasakuthara Rasa*. Quantity of *Parada* (Mercury), *Gandaka* (Sulphur), *Vatsanabha* (Aconite), *Tankana* (Borax), *Manashila* (Realger) remains the same, but the quantity of *Maricha* (*Piper nigrum L*) varies from one part to ten parts and *Pippali* (*Piper longum L*), *Shunti* (*Gingiber officinale*), varies from one part each to six parts each. Details are explained in table 2.

Table 2: Ingredients and their proportions in *Shwasakuthara Rasa*

Ref	Parada	Gandaka	Vatsanabha	Tankana	Manashila	Maricha	Pippali	Shunthi
RSS(8)	1P	1P	1P	1P	1P	1P	1P	1P
RSS(9)	1P	1P	1P	1P	1P	2P	1P	1P
RSS(10)	1P	1P	1P	1P	1P	7P	3P	3P
BP(11,12)	1P	1P	1P	1P	1P	10P	2P	2P
YR(13)	1P	1P	1P	1P	1P	9P	1P	1P

Ref	Parada	Gandaka	Vatsanabha	Tankana	Manashila	Maricha	Pippali	Shunthi
RKD(14)	1P	1P	1P	1P	1P	10P	2P	2P
BR(15)	1P	1P	1P	1P	1P	2P	1P	1P
BR(16)	1P	1P	1P	1P	1P	8P	6P	6P
RS (17)	1P	1P	1P	1P	1P	2P	1P	1P
RS(18)	1P	1P	1P	1P	1P	5P	1P	1P
RJN(19)	1P	1P	1P	1P	1P	2P	1P	1P
RJN(20)	1P	1P	1P	1P	1P	8P	3P	3P
RC(21)	1P	1P	1P	1P	1P	1P	1P	1P
RC(22)	1P	1P	1P	1P	1P	5P	1P	1P
BRRS(23)	1P	1P	1P	1P	1P	1P	1P	1P
BRRS(24)	1P	1P	1P	1P	1P	2P	1P	1P
BRRS(25)	1P	1P	1P	1P	1P	5P	1P	1P
BRRS(26)	1P	1P	1P	1P	1P	5P	1P	2P
RYS(27)	1P	1P	1P	1P	1P	7P	1P	1P
BBR(28)	1P	1P	1P	1P	1P	10P	2P	2P
BBR(29)	1P	1P	1P	1P	1P	1P	1P	1P
AFI(30)	1P	1P	1P	1P	1P	9P	1P	1P

Dose and Anupana:

The dose of *Shwasakuthara Rasa* varies from $\frac{1}{2}$ Gunja to 5 Gunja. Maximum texts mentioned the dose of *Shwasakuthara Rasa* as one Gunja to two Gunja. *Parnakhanda swarasa (P. betel)* is mentioned as *Anupana* in maximum texts. Details are given in table 3.

Table 3: Showing different Anupana and Matra of SKR from various texts

Texts	Anupana/Sahapana	Matra
RSS (8)	<i>Ushnodaka, Kantakari Kwatha</i>	5 Gunja
RSS (9)	<i>Madhu</i>	1 Gunja
RSS(10)	-	2 Gunja
YR(13)	<i>Parnakhanda rasa</i>	1 Gunja
RKD(14)	<i>Parna khanda rasa</i>	1 Gunja
BR (15)	<i>Madhu, ardraka rasa or ghritha with Maricha choorna</i>	$\frac{1}{2}$ -1 Gunja
BR (16)	<i>Parna rasa, Ardraka swarasa</i>	2-4 Gunja
RS (18)		2 Gunja
RJN (20)	<i>Parna rasa, Ardraka rasa</i>	
RC (21)	<i>Ushnodaka, Kantakari Kwatha</i>	5 Gunja
RC(22)		2 Gunja
BRRS (23)	<i>Ushnodaka, Kshudra Kwatha</i>	5Gunja
BRRS(24)		2Gunja
BBRS(26)		1 Valla
RYS (27)	<i>Parnakhanda Rasa</i>	1 Gunja
AFI(30)	<i>Madhu</i>	125-250mg

Review of some research work and published papers on Shwasakuthara Rasa

Pharmaceutical Study:

The results showed that SKR prepared by adding 8 parts of *Maricha* one by one showed increase in Piperine %. Thus to get efficacious result in low dose SKR should be prepared by adding 8 parts of *Maricha*. (31)

Toxicity Study:

Acute toxicity study is concluded that LD50 of SKR is greater than 2000mg/kg body weight. Sub acute toxicity study concluded that SKR is safe at therapeutic dose, 5 times of therapeutic dose, and up to the 10 times of therapeutic dose. (32)

Experimental study:

Study concluded that SKR prepared by 8 parts of *Maricha* more effective in protecting against histamine induced bronchospasm in experimental model.(33)

Bioavailability and efficacy study:

Bioavailability and efficacy of *Maricha* (*Piper nigrum L.*) in SKR was studied. The study concluded that SKR prepared by 8 parts *Maricha* in classical way showed increased bioavailability to mercury and is more efficacious in controlling the signs and symptoms of *Shwasa*. (34)

Research articles:

- Effect of *Svasa Kuthararasa* And *Shirishadi Kashaya* On Patients Of *Tamaka Svasa*. *Shirishadi Kashaya* and *Shwasakuthara rasa* showed similar results in controlling the symptoms dyspnoea and cough and increasing the vital capacity, but *Shirishadi kashaya* showed highly significant results when compared to SKR. (35)
- Effect of *Swasakuthara Rasa* in the treatment of *Tamaka Shwasa*; *Shwasakuthara Rasa* shows highly significant results in relieving the symptoms of *Tamaka Shwasa* when administered with *Tambula Patra swarasa* in the dose of 125mg BD for 15 days. (36)
- In Anti-Microbial Study of *Shwasakuthar Rasa* is effective against three strains of *Stah. Aureus*. (37)

Discussion

Shwasakuthara Rasa is a well known *Khalveeya Rasayana* indicated in *Shwasa roga* as its name itself confirms the main indication. It was first explained in *Rasendra Sara Sangraha* of 15th century AD.

Maximum texts followed *Rasendra Sara Sangraha* 2nd and 3rd reference. There are mainly nine variants in *Shwasakuthara Rasa*, having eight total ingredients which remain same in all available references. The ingredients like *Vatsanabha*, *Tankana*, *Manashila*, and *Trikatu* have similar properties like *Katu Rasa* (pungent taste), *Ushna Veerya* (hot in potency), *Teekshna* (sharp

Guna, *Kapha vatahara* (alleviate *kapha* and *vata*), *Agnideepana* (Carminative) and *Kaphanissaraka* (expectorant). Thus all these are individually indicated in *Shwasa* and *Kasa*. *Maricha* is the chief ingredients in many references mainly contain an alkaloid Piperine which acts as an efficient bioavailability enhancer for different nutrients and trace elements. (38) It exhibits potent anti-microbial, anti-oxidant, anti-inflammatory, anti-cancer, anti-depressant, anti-apoptotic, antipyretic, analgesic and anti-asthmatic activities. (39) Thus the maximum quantities of *Maricha* in the formulation potentiate the action of SKR. The fruit extract of *Pippali* (*Piper longum L.*) demonstrated significant mast cell stabilizing and antitussive activity.(40) These effects are the important evidence for the traditional use of fruit of *Piper longum* in the treatment of cough and respiratory disorders. Thus all ingredients act in synergism to break the *Samprapti* of *Shwasa*.

Yogaratanakara and *Rasa Kamadhenu* mentioned a unique method of preparation of SKR to add *Maricha* one by one and triturate in the formulation. This may help to release active component directly to the formulation and prevent the loss of volatile components. This even increases the duration of *Mardhana* (*Trituration*), thus increases the efficacy of the formulation. In many of previous studied research works adding more *Maricha* one by one showed better results analytically, pharmacologically and clinically. Studies also prove increase in % of Piperine.(31)

None of the texts mentioned any of liquid media for *Bhavana* of SKR. The dose of SKR varies from ½ *Gunja* to 5 *Gunja*. Maximum texts explained 2 *Gunja* dose when 8 or 9 parts of *Maricha* is added. *Parnakhanda Swarasa* is mentioned as *Anupana* in maximum texts as it is indicated in *Shwasa*, *Kasa*. This is having *Katu Rasa*, *Ushna Veerya*, *Vishada* (Cleansing), *Sara Guna* and *Kaphavatahara* property.(41) It has shown inhibitory action on production of allergic mediators. (42) These properties are similar with the ingredients thus synergize the therapeutic efficacy of the drug.

Ardraka swarasa (Ginger juice) is also indicated as *Anupana* that is also beneficial in *Shwasa* and *Kasa*. Ginger contains two important sulphur based amino acids called cysteine and methionine which can act as phytochelatins and makes arsenic in the *Manashila* a nontoxic element. *Zingiber officinale* affected the bioavailability, elimination and uptake of heavy metals in a time-dependent way in the liver. (43)

AFI followed *Yogaratanakara* to prepare SKR by using nine parts of *Maricha*. The dose is given as 125-250mg using *Madhu* as *Anupana*.(30)

SKR is used in *Pradhamana Nasya* in *Moorcha*, *Apasmara*, *Tandra*, *Pramoha* as *Maricha* is a good *Shirovirechaneeya*(44) and *Shirovirechanopaga dravya* (45) which is having *Ushna* and *Teekshna guna*.

Review from research works depict that SKR having *Maricha* as chief ingredient showed better result

analytically, pharmacologically and clinically. The drug SKR is safe in acute and subacute toxicity study. (31-34)

Conclusion:

SKR mentioned as *Khalveeya rasayana* in all texts. *Shwasakuthara Rasa, Maha Shwasa Kuthara Rasa, Bruhat Shwasa Kuthara 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 *Shunti* varies from text to text. *Maricha* considered as a chief ingredient in maximum texts which varies from one part to ten parts. This is the safe and effective formulations indicated for *Shwasa* and *Kasa*.

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