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Review Article

ADOPTING INNOVATIVE METHOD AND COMPARATIVE EVALUATION OF SWETHA PARPATI MENTIONED IN AYURVEDIC LITERATURE

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ABSTRACT

In Ayurveda, the study of the therapeutic uses and effects of drugs means Pharmaco-therapeutic is described under the branch of *Rasashastra* which mainly incorporates inorganic, herbo-mineral and metallic pharmaceutical preparations namely *Khalviya Rasayana*, *Parpati Rasayana*, *Pottali Rasayana* and *Kupipakwa Rasayana*. This article aims for the comparative assessment of *Swethaparpati* coming under *Parpatikalpa* mentioned as per reference of Sidhayogasangraha, AFI with another reference of Rasodharatantra. According to the first two references the ingredients used for the preparation are *Suryakshara*, *Sphatika* and *Navasadara* and as per the third reference ingredients like *Tankana* and *Karpura* are added. Here a detailed review of literature has been collected regarding the potential of the above mentioned individual ingredients along with the recent research updates regarding individual ingredients used in the production of *Swetha Parpati* according to both the references it also incorporate research updates on the formulation *Swetha Parpati*. This article also aims pharmaceutical standardization of standard method adopted in process of production of *Swethaparpati* with the alteration made from the usual method adopted in preparation of *Parpati Kalpana* that will help for developing new improved SOP regarding the formulation. This paper also aims in projecting the improved therapeutic value which could be generated by addition of new ingredients mentioned as per reference of Rasodharatantra.

KEYWORDS: *Khalviya Rasayana*, *Parpati Rasayana*, *Pottali Rasayana*, *Kupipakwa Rasayana*.

INTRODUCTION

Parpati Kalpana (Flakes) is a well known and successfully used preparation for the management of *Grahani* (Malabsorption/sprue syndrome). Before the invention of *Parpati*, *Grahani* was considered difficult to cure but after the invention of *Parpati* it became easily curable. The use of *Parpati* was found beneficial for alleviating associated symptoms of *Grahani* as well as various other diseases like *Rajayakshma*, *Kustha*, *Gulma* etc. Later various scholars derived different types of *Parpatis* by adding one or the other ingredients like gold, silver, Iron, copper, mica, pearl and other precious stones. Some of them are *Tamra Parpati* (*Rasa Prakasasudhakar*), *Panchamruta Parpati* (*Rasendra Sara sangraha*), *Swarna Parpati* (*Rasapaddhati*), *Loha Parpati* (*Rasa paddhati*), *Vijaya Parpati* (*Bhaisajya Ratnavali*) etc^[1]. *Shwetaparpati* is an Ayurvedic medicine coming in *Parpatikalpana*, used in the treatment of difficulty in urination, urinary calculi, dyspepsia etc. This is also known as *Ksharaparpati*. *Swetha Parpati* is different from other *Parpatikalpas* since it does not contain *Parada* and *Gandhaka* as its ingredient. It contains *Suryakshara*, *Sphatika* and *Navasadara* as main ingredients as per AFI and Sidhayogasangraha. Rasodharatantra mentions the addition of *Tankana* and *Karpura* to improve the therapeutic efficacy of the formulation.

Etymology

The Sanskrit word "*Parpati*" denotes a thin flake like preparation. On heating *Kajjali* (HgS) transforms to a thin, flat preparation. In practice though it possesses a thin, flat shape, it is first powdered and then used for medicinal purpose. "*Rasatarangini*" also mentions "*Parpati*" as "*Parpatika*" which has the same meaning. But "*Bharat Bheishajya Ratnakara*" denotes "*Parpatika*" as the bits and fragments left in an iron vessel. *Parpati* is a thin flake like preparation which is developed from "*Potabandha*", consisting of mainly *Parada*, *Gandhaka* and other drugs [It may be *Dhatubhasmas* (ash of metals-non metals) or *Kashthaushadis* (ash of herbal drugs)].^[2]

Synonyms^[3]

- Parpat* (Papad like),
- Parpati* (Thin flake),
- Parpatika* (thin and brittle flake),
- Potabandha* (Adhesions or to give support)

Nomenclature of different *Parpatikalpanas*^[4]

1. If *Parada* and *Gandhaka* are used then it is called as- *Rasa Parpati*.
2. If *Parada-Gandhaka* are mixed with any *Dhatu/Loha*, then it is named on the basis of *Dhatubhasma* used. e.g.- Use of *Lauhabhasma- Lauhaparpati*, use of

Tamrabhasma- Tamraparpati, use of *Suvar nabhasma- Suvarnaparpati*.

3. If *Parada- Gandhaka* are mixed with any *Kasthaushadhi* like *Bola- Bola Parpati*.
4. Depending upon number of ingredients used - *Panchamritaparpati* (with 5 drugs), *Saptamritaparpati* (with 7 drugs).
5. Depending upon the efficacy - *Kusthantaparpati*. (Indicated in Skin disorders).
6. Depending upon the colour and quality of ingredients - *Shweta Parpati* (white in colour).
7. Depending upon the person who prepared the *Parpati-Bhairvnatha Parpati*.

Materials and Method adopted in *Parpati Kalpana* and its importance^[5]

1. Lauha Darvi (iron pan): To prepare *Parpati*, *Kajjali* is liquefied on *Agni* with the help of *Lauha Darvi*. In some texts, use of even *Tamra Darvi* (copper vessel) is also advised.

2. Agni: It plays a very important role in the preparation of *Parpati*. *Mridu Agni* (low fire) is required to liquefy *Kajjali*. *Paka Karma* (cooking) is done till *Kajjali* attains *Pankvatta* stage i.e. muddy appearance.

3. Ghrita: Prevention of adherence of *Kajjali* to the Iron pan and preventing the *Kadalipatra* from burning. It also plays an important role of giving *Soumya* and *Snehatva* quality to the *Parpati*.

4. Gomaya (cow dung): *Gomaya* bed acts as a cushion for pressing. Moreover *Parpatikalpana* is usually prescribed for the treatment of the *Pittaja Vyadhis* (diseases of *Pitta* origin) and *Jatharagnimandiyarogas* (diseases due to low digestive fire). Use of Fresh *Gomaya* increases the potency of the medicine. It contains maximum ratio of biliary products which in turn during preparation of *Parpati* gets absorbed in to the heated *Kajjali* through the *Patra* media and thus helps to regulate the biliary ailments and other *Pittajanyavyadhis* (diseases).

Properties of Cow dung: The main constituent of cow dung is debris from cells within the digestive tract and secretions from the body such as salts, sloughing of animal cells and mucus. Cow dung also contains undigested diet comprising cellulose and lignin, originating from the cell wall of the plants.

Patra: Use of *Patras* (leaves) like *Kadali Patra* (banana leaf), *Erandapatra* (castor leaf) etc in the preparation increases the potency of the drug. Use of *Kadalipatra* gives *Kashaya* property to the *Parpati* and exerts therapeutic effects on human systems especially on G.I.T.

Comparative Evaluation of *Swetha Parpati* Mentioned In *AFI*^[6], *Sidhayogasangraha*^[7] And *Rasodharatantra*^[8] *Swetha Parpati*^[6,7]

Ingredients: *Surya kshara* - 1 part, *Sphatika* - 1/8 part, *Navasadara* - 1/16 part

Method of preparation: All the ingredients are grounded well, taken in mud vessel, heated, melted, poured on to an even surface, pressed to form thin white cakes (*Parpati*).

Unlike the other *Parpati* preparation, here, mud vessel is taken instead of iron vessel, and while heating, no

ghee is added to the powder mixture and mixture is poured in to a clear surface than *Kadalipatra* (Banana leaves). *Shweta Parpati* is an Ayurvedic medicine in tablet or powder form, used in the treatment of difficulty in urination, dyspepsia, etc. This is also known as *Ksharaparpati*.

Shweta Parpati uses: *Mutrala* (diuretic), *Swedjanan* (promotes sweat), *Ashmari* (urinary calculi), *Mutrakriccha* (urinary disorders), *Mutraghata* (urinary obstructions) etc.

Dose : 5-10 *Ratti* (625-1125 mg)

Anupana- Sheetajala, Narikelajala, Sharkarayuktajala

Effect on Tridosha: Balances *Vata* and *Pitta*.

How long to use: It can be used upto 1- 2 months, based on physician's advice.

Precautions for usage of *Kshara Parpati*

- It is better to avoid in children, pregnant and lactating mothers.
- Take this medicine only in prescribed dosage for certain duration only.
- Over-dosage may cause poisonous side effects. It should be stored in a cool and dry place.

Ingredients of *Swethaparpati* with their quantity and melting point^[8]

S. No	Name of ingredient	Quantity	Melting point
1	<i>Suryakshara</i>	20 <i>Karsha</i>	334 ⁰ C ^[9]
2	<i>Sphatika</i>	5 <i>Karsha</i>	92-95 ⁰ C ^[10]
3	<i>Tankana</i>	3 <i>Karsha</i>	743 ⁰ C ^[11]
4	<i>Karpura</i>	3 <i>Karsha</i>	175 ⁰ C ^[12]
5	<i>Navasadara</i>	3 <i>Karsha</i>	338 ⁰ C ^[13]

Preparation

All the ingredients are taken in a *Sharava* made up of mud and heated over mild fire to melt them. When whole drug mass get liquefied the substance is taken out from fire and *Parpati* is prepared as per classical method, then the end product is stored in glass container for therapeutic purpose.

Difficulty in Preparation

Karpura is added at last i.e. after taking the *Sharava* out and in *Swangasheetaavastha* since *Karpura* is a volatile substance. There will be chances that ghee smeared *Kadalipatra* burns soon after pouring the liquid material and the *Kadalipatra* itself will not tolerate the temperature as compared with *Parpati* containing *Parada* (38.82⁰c)^[14] and *Gandhaka* (115.2⁰c)^[15] which is having less melting point than individual drugs of *Swethaparpati*. The best procedure is to melt the material in mud *Sharava* and pour the molten material in clean white surface which can withstand heat.

Dose: 1-10 *Ratti* (125mgs to 1.25gms) is used along with milk and water.

Indications:- *Mutraghata, Mutrakrichra, Mutradaha* etc.

Therapeutic uses of individual drugs (ingredients) of Swethaparpatias per Rasatarangini

Name of Drug/Ingredient	Therapeutic Use of Purified Drug
Suryakshara (Potassium nitrate)	Vidagdhaajeerna (indigestion), Asmari (urinary calculi), Mutrakrichra (urinary diseases), Agnimandya (loss of appetite), Panduroga (iron deficiency anaemia), Prameha (urinary disorders/diabetes mellitus) ^[16]
Sphatika (Potash Alum)	Visarpa (erysipelas), Switra (vitiligo), Vranaropana (heal the wound), Netraroga (eye disorders), Vishamajwara (chronic fever), Grahani (Sprue/IBS), Rudirasravrodhini (stops bleeding). ^[17]
Navasagara (Ammonium chloride)	Gulma (gaseous tumour of abdomen), Adhmana (fullness of abdomen), Mukhasosha (dryness of mouth), Vrishchikavishanashaka (antidote of poison of scorpion), Hridroga (heart disorders), Netrya (cures eye ailments), Kushta (skin disorders). ^[18]
Tankana (borax)	Adhmana (fullness of abdomen), Sthavaravishanashaka (pacifies poison caused by plants), Vrananasahana (cures the wound), Moodagarbhapravarthaka (expels malformed foetus), Balya (provides strength). ^[19]
Karpura (camphor)	Vatahara (alleviates Vata which helps in metabolism and functions of body), Shothahara (anti oedematous), Vedanahara (reduces pain) ^[20] etc.

Research carried out on Swethaparpati

1. Role of Shwet Parpati in Mutrakrichra (Dysuria)^[21]
Shwetaparpati Contains-Shudhasora 16 parts, Shuddhkankshi 2 parts, Shuddhanavsadar 1 part and prepared by method of Parpatikalpana. All the ingredients of Shwetparpati are Mutrala (Diuretic) in nature. This study was a randomized controlled clinical trial. The other group was given placebo treatment to see whether the results obtained were by chance or due to the drug.
2. Effect of Swethaparpati in Mutrakrichra: An Article Review^[22].
It is an effort done to assess the mode of action of the drug considering the potential of each ingredient, Suryakshara, Sphatika and Navasagara. Detailed review of literature including the recent research works done on the single ingredients is included. In diuresis one more thing to be tested symptomatically is potassium depletion, which other diuretics make, whereas in Shwetaparpati it is absent. The action of the drug based on the alkalinity/acidity is also tried.
3. An observational clinical study on the management of Mutrakrichra (lower urinary tract infection).^[23]
Study was conducted on 40 patients who were administered with the combination of Gokshurachurna, Pashanabhedadi kashaya and Shwetaparpati for the duration of 15 days. Out of 40 patients 23 (57.3%) got complete relief and 17 (42.5%) got marked relief from the parameters considered for the assessment of result which was statistically highly significant with P value 0.000.

Research Updates of Individual Drugs of Swethaparpati**Suryakshara and Sphatika^[22]**

These two drugs contribute K⁺ ion which acts as an alkalinizer is the drug used in all conditions of dysurea. Urinary tract alkalinizer; produces an alkaline load that increases urinary pH and raises urinary citrate by augmenting citrate clearance without measurably altering ultra filterable serum citrate; produces urine that is less conducive to crystallization of stone-forming salts.

Tankana^[24]

It induces menstruation in women suffering with amenorrhoea or oligomenorrhoea (scanty menstrual flow); it is useful in uterine infections.

Karpura^[25]- Diuretic and keeps the urinary system free of bacterial infestations.

(Companies like Dhootpapeswar, Baidyanath, IMPCL are manufacturing Swetaparpati on the reference mentioned in Sidhayogasangraha and AFI).

Discussion and Conclusion

Preparation of Swethaparpati follows slightly different pattern of making than usual Parpati preparations. It does not contain Parada and Gandhaka as its ingredient. And in therapeutic use it is mainly used in Mutrakrichra, Mutraghta etc when compared with other Parpati preparations like Rasa parpati which is used mainly in Grahani. All other Parpati uses Lohadarvi to heat the ingredients, but here we usually use mud Sharava to prevent reaction of ingredients since main ingredient in Swetaparpati is Kshara. The melting point of the ingredients used in Swethaparpati is high when compared with other Sagandhaparpatias which has Parada (38.82°C) and Gandhaka (115.2°C) as main ingredient. There is no need of smearing ghee in the vessel since Kshareeya ingredients will not stick on the pot or vessel. After melting, the ingredients of Swetaparpati are not poured in Kadalipatra. This is due to the fact that melting point of individual drugs are too high and they have Kshareeya property (corrosive nature) which will cause charring of Kadalipatra. Therapeutically Kadalipatra gives the Kashaya property to the Parpati and such leaves exert therapeutic effects on human bodily systems especially on gastro intestinal tract. Gomaya bed acts as a cushion for pressing. Usually Parpatikalpana is prescribed for the treatment of the Pittajavyadhis (diseases of Pitta origin) and Jatharagnimandyarogas (diseases of low digestive fire). Use of fresh Gomaya increases the potency of the medicine as it contains maximum ratio of biliary products. During preparation of Parpati biliary products gets absorbed in to the heated Kajjali through the Patra media. This in turn helps to regulate the biliary ailments and other Pittajanyavyadhis (diseases). Swethaparpati is therapeutically used in diseases like Mutraghata, Mutrakrichra etc which does not require the biliary action imparted by Gomaya and Kashaya property. Because of this reason after melting the ingredients they are poured in clean even surface but not on Kadalipatra and Gomaya bed.

Swethaparpati mentioned in Rasodharatantra is having additional ingredients like *Tankana* and *Karpura*. These two ingredients will contribute additional therapeutic values to the formulation. Research studies shows that *Tankana* has therapeutic effect on uterine infections and *Kapura* increases urine output and keeps the urinary system free of bacterial infestations. Industries and other stake holders of Ayurveda are preparing *Swethaparpati* as per reference of Siddha *Yogasangraha* and AFI. The reason may be due to the fact that addition of *Tankana* may take almost double time to melt since its melting point is 743°C; which is almost double when compared with other ingredients. Also *Karpura*, the other ingredient, can be added only after cooling. It also requires careful addition due to its highly volatile nature. Hence this product requires more time and care than other *Sagandhaparpatis* (*Parpatis* with *Sulphur*). So to increase the therapeutic properties it is better to adopt the formulation mentioned in Rasodharatantra which will help the Ayurvedic scholars, scientist and stake holders to obtain better result out of the formulation.

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