

## KASISA – VISHESHATAHA SHWITRAHARAM (VITILIGO)

Prithvija Chakravarthy<sup>1</sup>, Surekha S Medikeri<sup>2</sup>

<sup>1</sup>2<sup>nd</sup> year MD scholar, <sup>2</sup>Guide and HOD, Professor, Department of Rasa Shastra and Bhaishajya Kalpana, Govt. Ayurveda Medical College, Bengaluru, Karnataka, India

Email: [drprithvija@gmail.com](mailto:drprithvija@gmail.com)

### ABSTRACT

*Shwitra/Vitiligo* is a common depigmenting skin disorder, characterized by acquired, idiopathic, progressive, circumscribed hypomelanosis of the skin and hair, with total absence of melanocytes microscopically. The stigma associated with *Shwitra* dates back to ancient time when it was confused with contagious or severely disfiguring entities. Today, even though it has been proved to be non-communicable, the substantial disfigurement associated with it is causing devastating social consequences and thus leading to serious emotional stress for the patient and their family. It is observed worldwide that the incidence rate is upto 2%. Even after extensive scientific research, the treatment measures for this condition are still very scarce, slow and their efficacy is not upto the mark. Hence, a treatment approach with *Rasa dravyas*, which have a faster action and higher efficacy, is the need of the hour. *Kasisa* (green vitriol/ferrous sulphate) is the third mineral in the group of *uparasa*. It has been mentioned in our classics since the period of *Charaka Samhitha* in the treatment of *Shwitra* both for internal use as well as external application. *Rasa tarangini* has quoted *Kasisa* to be “*Visheshataha Shwitraharam*” emphasizing the importance of it in treating *Shwitra*. When we look at the modern perspective of melanin synthesis, researches have led to the fact that iron catalyses the formation of melanin pigment from tyrosine, which substantiates the efficacy of *Kasisa* in *Shwitra*.

**Keywords:** *Shwitra, Kasisa, Vitiligo, rasaushadhi, shwitraghna*

### INTRODUCTION

The word *Shwitra* is derived from the root word – *shwetha*, meaning white and *rak*, being the suffix for the word root. In Ayurveda *Shwitra* comes under a broad heading of *Kushta*/skin diseases. *Shwitra* differs from other *kushta* by the normal functioning of all but the *twak*, resulting in *twak vaivarnyata* (discolouration) and *aparishrava* (without discharge)<sup>1</sup>. It is defined as “*Shwetayati iti shwitra*” meaning – change towards white colour. The social

stigma of *Shwitra* dates back to ancient times, when it was confused to be a communicable disease. Sushruta and Vagbhata consider skin diseases to be *Aupasargika*<sup>2</sup> or communicable in nature.

According to modern dermatology *shwitra* can be compared to Vitiligo or Leucoderma. Vitiligo is a common pigment related disorder, which can be defined as circumscribed, acquired, idiopathic, progressive hypomelanosis of the skin and hair<sup>3</sup>.

Though it is a harmless affliction, due to the social stigma and disfigurement, the affected person gets mentally depressed. In today's era of science and technology, even though mankind can reach upto the cellular level, vitiligo is still a challenging problem to all systems of medicine. PUVA (psoralen + Ultraviolet A) is used in allopathic treatment, apart from surgical and laser therapies, which is only leading to adverse side effects like pruritis, burning, blistering, erythema, skin aging, skin cancer<sup>4</sup> etc. Hence there is a need to unlock the unexplored treasure box of Ayurvedic medicines that are mentioned in the classics.

*Shwitra*, being a *deergha roga*, should be treated as quickly as possible. Here is where the utility of *Rasa Aushadhis* come into picture for faster action and higher efficacy. *Kasisa* (ferrous sulphate) has been mentioned under the group of *Uparasas* in *Rasa Shastra* text books. In all the textbooks, *Kasisa* has been attributed with *Shwitragnha karma*, more precisely in *Rasa Tarangini*, the author mentions *Kasisa* as – *Visheshataha Shwitraharam*<sup>5</sup>, thereby eliciting the importance of usage of *Kasisa* in *Shwitra*.

Here an attempt has been made to review *Kasisa* as *Shwitrahara* in various forms like *lepa*, *bhasma* and *Kupi pakwa rasa* preparations, most of which are yet to be brought into practise for the treatment of *Shwitra*.

#### ***Kasisa* in different forms in the management of *Shwitra*:-**

*Kasisa* has been mentioned as *Shwitrahara* since the period of *Charaka Samhitha* i.e, 8<sup>th</sup> century BC. Charaka and Sushrutha mentioned *Kasisa* in the form of external application or *lepa* form. The internal administration of *Kasisa* is seen from the period of *Rasa Ratnakara* i.e., 7<sup>th</sup> Century AD.

##### > ***Kupi Pakwa Rasa*:**

- *Rasa Ratna Samucchaya*-  
*Khageshwara rasa*<sup>6</sup>:

Ingredients - *Kajjali (samaguna)* is prepared by triturating 1 *pala* of *Parada* and 1 *pala* of

*Gandhaka*. 1 *pala* of *Kasisa* is added to it and *mardana* is done by added *Arjuna twak rasa/Kashaya*.

Method of preparation – *Kupi pakwa* method

Duration of Heat – *saardha dina* or 36 hours

Dosage: 1 *valla*

*Anupana* : *Kutaja*

##### > ***Bhasma* preparations:**

- *Rasa Ratna Samucchaya* –

*Kasisa baddha rasa*<sup>7</sup>: 5 *pala* of *Kasisa* is trichurated with 1 *pala* of *Parada* on addition of *Arjuna tvak rasa* for 1 *Yama* and *Kroda/ Varaha Puta* is given.

Dose: 1 *valla*

*Anupana*: 1 *Sana* of *Bakuchi* and *madhu*

Duration: 3 months.

- *Rasendra kalpa druma and Chikitsa kramakalpavalli* – also mentioned *Kasisa baddha rasa* similar to *Rasa ratna samucchaya* in the management of *Shwitra*.

- *Rasa Chandamshu* –

*Shwitrari rasa*<sup>8</sup> : *Kajjali* is prepared by trichuration *Parada* and *Gandhaka* and *Kasisa* is added to it along with *Tulasi Swarasa* and *Bhavana* is done. Then *Changeri Swarasa bhavana* is done and it is subjected to *Gaja Puta*.

Dose: 7 – 10 *Tandula* in the beginning and increased slowly by 5 – 6 *Tandula*

*Anupana*: *Madhu and Ghritha, Dadhi and Ghritha, Navaneeta, Dhatri and Ardraka swarasa, Tinduka, Kadali phala*.

##### > ***Lepa*:**

The most common form of usage of *Kasisa* in *shwitra* is *lepa*. The following is a list of ingredients of various *lepas* for application on the affected area and their references.

- *Charaka Samhitha* – *Kasisa, Manahshila, Vidanga, Rochana, Kanakapushpi* and *Saindhava*<sup>9</sup>
- *Sushrutha Samhitha* – *Kasisa, Svarjika, Tuttha, Vidanga, Gaara dhuma, Chitraka, Katuka, Sudha, Haridra* and *Saindhava*.<sup>10</sup>

- *Sharangadhara Samhitha* – *Kasisa, Musta, Haratala, Manahshila, Kampillaka, Gandhaka, Vidanga, Guggulu, Siktaka, Kushta, Goura sarshapa, Tuttha*, each of 1 *karsa* is added to 30 *palas* of *Ghritha* in a copper vessel and kept in sun for 7 days. This is then applied externally for *Savarnakara*.<sup>11</sup>
- *Swarnapushpi, Kasisa, Vidanga, Manahshila, Gorochana* and *Saindhava* are mixed together and *lepa* is applied.<sup>12</sup>
- *Rasa Prakasha Sudhakara* – *Suryabhakta Rasa*: during the treatment when blisters appear on the white patches of the skin, the following *lepa* is to be applied – *Nili, Gunja, Kasisa, Hamsapadi* and *Dhattura*.<sup>13</sup>
- *Bhaishajya Ratnavali* – For *Oshta shwitrashana* – *Kasisa, Haratala, Gandhaka, Chitrakamula* and *Triphala*<sup>14</sup>. The same *lepa* has been mentioned by *Rasendra Sara Sangraha* and *Rasa Chamdamshu*
- *Rasatarangini* - *Kasisa, Bakuchi beeja raja* and *Gairika* are applied for 2 months to cure *Daruna Shwitra*.<sup>15</sup>
- *Kasisa, Gunja beeja* and *Dhattura beeja* are mixed well and applied on affected region for 2 months to cure even *Chirothta Shwitra*.<sup>16</sup>

## DISCUSSION

- ✓ The properties of *Kasisa* are *Tikta* and *Kashaya rasa, ushna virya, katu vipaka, vata-shleshma hara* and *rakta sanjanana* along with *shwitrahara* action<sup>17</sup>, which makes it one of the prime drugs to be used in the treatment of *Shwitra*.
- ✓ *Shwitra* is *pitta pradhana tridoshaja vyadhi*. *Tikta rasa* has *Deepana, Pachana, Pittashleshma upashoshana* properties and *Kashaya rasa* also has *Shleshmaraktapitta prashamana guna*. So both the *Rasas* affect *Pitta* and *Shleshma* which are the main doshas in the *samprapti* of *Shwitra*.
- ✓ *Harita* endeavours to mention the *samprapti* of *shwitra* separately and says that *Vata* provokes *pitta* that is situated in *twak*, which along with *rakta* produces *pandura varna*. *Kasisa* having the action of *vata* and *shleshma hara* does *samprapti vighatana* of *shwitra*.
- ✓ *Kasisa* has been considered to be *shreshtha* in *Rakta sanjanana*. Acharya Charaka has listed *shwitra* under *rakta pradoshaja vikara*, also among the *dhatugata shwitra*, *raktagata* is one of the variety. Acharya Sushruta has illustrated *Rakta* as *Varna prasdana* entity, so in that way the role of *rakta* is to provide proper nutrients which are essential for proper melanogenesis.
- ✓ In the form of external applications, the *ushna virya* of *Kasisa* reaches the *siramukha* of *swedavaha srotas* and reaches the deeper layer of *twak* and acts locally to relieve the *sanga*. By this the *sampurana* of *bhrajaka pitta* takes place and hence normal function is noticed. Also when we look at the modern perspective, the permeability of the drug through the epidermis results in stimulation of the melanocytes for their normal function of melanogenesis.
- ✓ Due to the *Shwitraghna Prabhava* of *Kasisa*, it directly acts on the *Twacha* that is affected.
- ✓ Vitiligo is a condition in which only the active melanocytes are destroyed and inactive melanocytes in the outer root sheath of normal hair follicles are preserved and serve as the only source for the repigmentation. Recovery of vitiligo is initiated by the proliferation of these inactive melanocytes, followed by upward migration of inactive melanocytes to nearby epidermis to form perifollicular pigment patches and then stimulation of melanocytes to produce melanin pigments.
- ✓ *Kasisa*, identified as Ferrous sulphate, releases ferrous ions ( $Fe^{2+}$ ) in the body when administered. However, ferritin principally binds ferric and ferrous ions, keeping such ions in a nontoxic state within the cells.

- ✓ Presently, the role of iron/ ferrous ions in the tanning process is relatively unexplored to a larger extent.
- ✓ It has been demonstrated through researches that exposure of skin to UV light increases expression of both ferrous ( $Fe^{2+}$  and ferric ( $Fe^{3+}$ ) ions in melanosomes. It appears that ferrous ions are the critical oxidative iron species that influence tyrosinase activity by upregulating the enzyme's activity.<sup>18</sup> Another research suggests that ferrous ions may act to increase the functionality of tyrosinase enzyme, thereby accelerating the process of conversion of tyrosine to melanin.<sup>19</sup>

## CONCLUSION

The data provided in classics and modern physiology paves way for the following conclusion. *Kasisa* with precise *Shwitragnha karma* can reach into deeper layers of *twak* and relieve *sanga* which results in stimulation and activation of melanocytes, thus restoring normalcy. Hence significant results can be achieved in *shwittra* by using formulations containing *Kasisa*. External preparations can be made by altering the media of preparation and combination of both internal and external therapies may play a major role in the management of *Shwittra*.

## REFERENCES

1. Vagbhata. Ashtanga Hridaya, with the commentaries Sarvangasundara of Arunadatta and Ayurvedarasayana of Hemadri, edited by Pt. Hari Sadashiva Shastri. Varanasi: Chaukhamba Surbharti Prakashan; 2010. Nidana sthana. 14<sup>th</sup> chapter. Verse 37.
2. Vagbhata. Ashtanga Hridaya, with the commentaries Sarvangasundara of Arunadatta and Ayurvedarasayana of Hemadri, edited by Pt. Hari Sadashiva Shastri. Varanasi: Chaukhamba Surbharti Prakashan; 2010. Nidana sthana. 14<sup>th</sup> chapter. Verse 41-44.
3. Yaghoobi R, Omidian, M. & Bagherani, N. Vitiligo: a review of the published work. J. Dermatol, 2011; 38; 419-431.
4. Sheno SD, Prabhu S. Photochemotherapy (PUVA) in psoriasis and vitiligo. Indian J Dermatol Venereol Leprol 2014;80:497-504
5. Sri Sadananda Sharma. Rasa Tarangini. Commentary by Sri Haridatta Shastri and hindi translation by Dharmananda Shastri. Delhi: Motilal Banarasidas; 8<sup>th</sup> edn; 2014. 21<sup>st</sup> Taranga. Verse 260.
6. Vagbhatacharya. Rasa Ratna Samucchaya, Hindi teeka by Ambika Datta Shastri. Varanasi: Choukhambha Sanskrit Bhavan; II edn: 19. 20<sup>th</sup> chapter. Verse 81-84.
7. Vagbhatacharya. Rasa Ratna Samucchaya, Hindi teeka by Ambika Datta Shastri. Varanasi: Choukhambha Sanskrit Bhavan; II edn: 19. 20<sup>th</sup> chapter. Verse 134-137.
8. Sri Datta Vaidya. Rasa Chandamsu, Hindi commentary by Jnanendra Pandeya. Varanasi: Choukamba (Krishnadasa Academy Press);2010. Kushta chikitsa. Pp 570.
9. Agnivesha. Charaka samhitha, Text with English translation and critical exposition based on Chakradatta's Ayurveda dipika by Dr. Ram Karan Sharma and Vaidya Bhagwan Dash. Varanasi: Chowkamba Sanskrit series office; 2012. Chikitsa sthana. Chapter 7. Verse 167.
10. Sushrutha. Sushrutha samhitha, English translation of text and Dlahana's commentary by Priya Vrat Sharma. Varanasi: Chaukhambha Visvabharati; 2005. Chikitsa sthana. Chapter 9. Verse 10.
11. Sharngadhara. Sharngadhara samhitha, translated in English by Prof. KR Srikantha Murthy. Varanasi: Chaukhanbha Orientalia; 2010. Madhyama khanda. Chapter 9. Verse 51-57.
12. Sharngadhara. Sharngadhara samhitha, translated in English by Prof. KR Srikantha Murthy. Varanasi: Chaukhanbha Orientalia; 2010. Uttara khanda. Chapter 11. Verse 40.
13. Yashodhara Bhatta. Rasa Prakasha Sudhakra, Hindi commentary by Siddhinandan Mishra. Varanasi: Chaukhambha Orientalia; 2009. Pp 175.
14. Govinda Dasa Sen. Bhaishajya Ratnavali, with Siddhiprada hindi commentary by Prof. Siddhi Nandan Mishra. Vranasi: Chaukhambha Surbharati Prakashan; 2016. Chapter 54. Verse 51.

15. Sri Sadananda Sharma. Rasa Tarangini. Commentary by Sri Haridatta Shastry and hindi translation by Dharmananda Shastry. Delhi: Motilal Banarasidas; 8<sup>th</sup> edn; 2014. 21<sup>st</sup> Taranga. Verse 253.
  16. Sri Sadananda Sharma. Rasa Tarangini. Commentary by Sri Haridatta Shastry and hindi translation by Dharmananda Shastry. Delhi: Motilal Banarasidas; 8<sup>th</sup> edn; 2014. 21<sup>st</sup> Taranga. Verse 252.
  17. Sri Sadananda Sharma. Rasa Tarangini. Commentary by Sri Haridatta Shastry and hindi translation by Dharmananda Shastry. Delhi: Motilal Banarasidas; 8<sup>th</sup> edn; 2014. 21<sup>st</sup> Taranga. Verse 231-233.
  18. A. Palumbo, M. d'Ischia, G. Misuraca, L. Carratu, and G. Prota, "Activation of mammalian tyrosinase by ferrous ions," *Biochimica et Biophysica Acta*, vol.1033,no.3,pp.256–260,1990.
  19. J. R. Ros, J. N. Rodriguez-Lopez, and F. Garcia-Canovas, "Effect of ferrous ions on the monophenolase activity of tyrosinase," *Biochimica et Biophysica Acta*,vol.1163,no.3,pp.303–308,1993.
- 

**Source of Support: Nil**

**Conflict Of Interest: None Declared**

How to cite this URL: Prithvija Chakravarthy & Surekha S Medikeri: Kasisa – Visheshataha Shwitraharam (Vitiligo). *International Ayurvedic Medical Journal* {online} 2018 {cited October, 2018}  
Available from:  
[http://www.iamj.in/posts/images/upload/2374\\_2378.pdf](http://www.iamj.in/posts/images/upload/2374_2378.pdf)