KASISA – VISHESHATAHA SHWITRAHARAM (VITILIGO)

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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 Samhita 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 kusha by the normal functioning of all but the twak, resulting in twak vaivarnyata(discolouration) and aparisrava (without discharge)1. 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 Aupasargika2 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 hair3.
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 up to 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 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 Shwitraghna karma, more precisely in Rasa Tarangini, the author mentions Kasisa as – Visheshataha Shwitraharam5, 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., 8th 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., 7th Century AD.

➢ Kupi Pakwa Rasa:

- Rasa Ratna Samucchaya-Khageshwara rasa6:

Ingredients - Kajjali (samaguna) is prepared by trituration 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 rasa7: 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 rasa8: 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 Saindhava9

- Sushrutha Samhitha – Kasisa, Svarjika, Tuttha, Vidanga, Gaara dhuma, Chitraka, Katuka, Sudha, Haridra and Saindhava.10

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• Sharangadhara Samhitha – Kasisa, Musta, Haratala, Manahshila, Kampillaka, Gandhaka, Vidanga, Guggulu, Siktaka, Gushta, Goura sarshapa, Tuttha, each of 1 karsa is added to 30 pala of Ghritha in a copper vessel and kept in sun for 7 days. This is then applied externally for Savarnakara.  

- Swarnapushpi, Kasisa, Vidanga, Manahshila, Gorochana and Saindhava are mixed together and lepa is applied.  

• 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.  

• Bhaishajya Ratnavali – For Oshta shwitranashana – Kasisa, Haratala, Gandhaka, Chitrakamula and Triphala. 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.  

- Kasisa, Gunja beeja and Dhattura beeja are mixed well and applied on affected region for 2 months to cure even Chiroththa Shwitra.  

**DISCUSSION**

✓ The properties of Kasisa are Tikta and Kashaya rasa, ushna virya, katu vipaka, vata-shleshma hara and rakta sanjanana along with shwitrahara action, which makes it one of the prime drugs to be used in the treatment of Shwitra.  

✓ Shwitra is pitta pradhanaya tridosha vyayadi. Tikta rasa has Deepana, Pachana, Pittashlesha upashoshana properties and Kashaya rasa also has Shleshmaraktaapitta 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 shreshta 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 prasadana 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 srimukha 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. 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.

**CONCLUSION**

The data provided in classics and modern physiology paves way for the following conclusion. *Kasisa* with precise *Shwitraghna 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 *shwitra* 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 *Shwitra*.

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