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Childhood Vitiligo (Shwitra) in Ayurveda: A Comprehensive Review of Classical Concepts and Therapeutic Approaches

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ABSTRACT

Vitiligo is an autoimmune dermatological disorder characterized by well-demarcated ivory-white macules and smooth patches resulting from the destruction of melanocytes triggered by factors such as allergens, chemicals, stress, diet, and sunlight. However, it is not a life-threatening disease. Still, the most important aspect of vitiligo is the cosmetic concern it arouses in the psyche of patients and their family members because of the stigma associated with it.
In Ayurvedic literature, Vitiligo may be correlated with *Shwitra* or *kilasa*, which is described under the *Kushtha roga*. *Shwitra* is developed, may be a vitiation of *Tridosha*, especially aggravation of *Pitta Dosha*, due to prolonged and excessive use of *Aahar*, which has properties of *Amla- Katu-Ushna-Lavan-Madhur ras*, *Viruddhahar*, along with *Navann Sevan* and *Dahi* (Curd), which may lead to loss of skin pigmentation due to destruction of melanocytes. The present review article compiles the etiology, prevention and management of *Shwitra* (Vitiligo) by *Sansaman* Chikitsa, followed by *Sansodhana* (purification) with exposure to sun rays in children.

Keywords: *Shwitra*, vitiligo, *Kilasa, Kushtha, Bakuchi*, Hypopigmentation.

INTRODUCTION

Vitiligo is an acquired autoimmune disorder characterized by patchy loss of skin or mucous membrane pigmentation due to destruction of melanocytes [1] triggered by factors such as allergens, chemicals, stress, diet, and sunlight, and is characterized by well-demarcated ivory-white macules and smooth patches. The exact prevalence of Vitiligo remains unknown, as no epidemiological survey has been conducted so far. However, worldwide prevalence of vitiligo reported up to 2.16% [2] while, in India it has been reported 0.25% and 4% [3] irrespective of the sex [4] however, in children, vitiligo more common in a female than male [5], [6] onset of this disease is before 20 years of age and, in 25% of the cases, it starts before the age of 10 years [7] another study shows the early onset at 7.3 years and late onset at 40.5 years.[8]
In Ayurvedic science, Vitiligo may be correlated with *Shvitra* or *Kilasa* [9], which is described under the *Kushtha roga*, caused by vitiation of *Tridosha*, especially aggravation of *Bhraajak Pitta* due to prolonged and excessive use of *Aahar*, which has properties of *Amla- Katu-Ushna-Lavan-Madhur ras*, *Viruddhahar*, along with *Navann Sevan* and *Dahi* [10]. These impacts may lead to loss of skin pigmentation due to destruction of melanocytes.
History: Vitiligo derives from the Latin word "vitilus," meaning "calf"; first used by Celsus, a Roman physician in the 1st Century A.D. [11] According to him, the white patches of the disease resembled those of a spotted calf. Vitiligo is mentioned as "*Shewetakusta*" in *the Atharva Veda and as "Kilas" in the Vinaya Pitaka (a Buddhist* sacred book). [12] *Shwitra* is also described in *Brihatrayi* and *laghutrayees*, and the disease is classified as Dharuna, Charuna, Shwitra, or *Khilasa*. [13]

Classification
It is classified into two types based on distribution and penetration: "segmental" and "non-segmental". Segmental vitiligo does not cross the midline, which implies the occurrence of depigmented macules and patches along dermatomal or quasi-dermatomal patterns [14]. In contrast, non-segmental vitiligo may be generalised or localized.

Theory of Vitiligo
There are mainly three theories behind the underlying mechanism of vitiligo, which are as follows: (i) the first theory states that nerve endings in the skin release a chemical that is toxic to the melanocytes; (ii) the second theory states that the melanocytes self-destruct; and (iii) the third theory is that vitiligo is a type of autoimmune disease in which the immune system targets the body's own cells and tissues.[15]

Aims and objectives
1. To understand the etio-pathogenesis of *Shwitra* (~Vitiligo) as per Ayurvedic aspects.

2. To compile the review of Ayurvedic prevention and management of *Shwitra* in children.

MATERIAL AND METHODS

Textual references are drawn from Ayurvedic classics; modern texts, journals, and websites are used.

AYURVEDIC ASPECT OF *SHWITRA*

Shwitra is derived from the *Sanskrit* word '*Sweta'*, which means whitish discoloured patch [16], and according to Kashyap Samhita, *Shwitra* is *"Shwetabhavamichchanti Shwitram",* which means whitish changes of the skin colour. [17]

1.Etiology (*Nidana*)

The exact etiology is still unknown, but all the etiological factors of *Kushtha* are responsible for the occurrence of *Shwitra* [18], which are categorized under *Samanya Nidana* of *Shwitra* and described in classical Ayurvedic texts, including Charaka Samhita, Sushruta Samhita, and Ashtanga Hridaya.

2. Etiological factors of *Shwitra* may be divided into two categories:

i. *Aharaja Nidana*

ii. *Viharaja Nidana*.

i. *Aharaja Nidan* [19]*:* -Various *Ahaaraja nidan* which are responsible for the etiology of *Shwitra* in children, as follows: -

- Intake of *Viruddha* and unwholesome *Mitya* or *Ahitakari* foods and drinks.
- Excessive intake of heavy foods (*Guru*) to be digested in a contradictory and disordered manner (*Viruddha*).
- *Atibhuktva* (eat too much/overindulge), *Ajirn*, *Adhyashana* (eat too much before the complete digestion of food).
- Excessive use of uncooked or half-cooked foods or toxic food, as well as water.
- Excessive intake of recently *Nava* rice, grains or pulses (*Navanna*), curd (*Dadhi*), fish (*Matsya)*, salt (*Lavana*) and sour (*Amla*) foods, blackgram (*Māsha*), radish (*Mulaka*), starchy food (*Pishtanna*), sesame (*Tila*), milk (*Kshira*) and jiggery (*Guda*).

ii. *Viharaja*: In Ayurveda, *Viharaja nidan* plays a major role in the occurrence of *Shwitra* (Vitiligo), such as [20,21,22,23]**:**

- *Chardi Vegadharan*: Acharya Charak described the various *Adharanya vega* (non-suppressible urges); suppression of the natural urge to vomit is one of them. *Adharanya* Vega is responsible for *Shwitra (Kustha).*
- Insensible behaviours like insulting Saints (*Sadhu ninda*), Teachers (*Guru nindā*), Brahmin, God, etc.
- *Papa karma* or Bad deals performed in the present life or past life. (*Pāpmabhi, Karmabhi Sadhyah*.
- Physical exercise (*Vyayama*) in excessive heat (*Ati santapam*) & after taking a heavy meal. (*Ati bhuktva*).
- Improper administration (complication) of Panchakarma therapies.
- Excessive sleeping during the day (*Diva nidra*).

According to Acharya Charaka, some specific causes for *Shwitra* might cover the idiopathic aspects such as – *Vachamsi asathyani* (telling lies), *Krutaghnabhavo* (ungrateful), *Suranam ninda* (abusing Gods), *Guru gharshanam* (abusing and disrespecting the teachers and elders), *Papakriya* (being involved in sinful acts), *Purvakruta karma* (sins done in previous birth) and *Virodhianna* (incompatible foods), etc., [24]

PURVARUPA

The *Purvarupa* of *Shwitra* has not been specifically mentioned in classical Ayurvedic texts. However, in *Shwitra*, dryness and discolouration (white patches) of the skin, without any pain, itching, or secretions, can be considered pre-clinical symptoms. One study found that patients with vitiligo, with or without irritated skin lesions, may experience itching before the appearance of depigmented patches. [25]

***RUPA* (CLINICAL SYMPTOMS)**

Shwitra and *Kilāsa* are synonymous in most of the Ayurvedic texts. However, some authors consider the two to be subtypes of *Kustha*. Further symptoms and classification of *Shwitra* have been described under the following subpoints:

1. According to Acharya Charaka [26], *Kilasa* has three subtypes which are caused by the vitiation of *Doshas*, such as*: Daruna- Raktam (*red*), Aruna-Tamra (*coppery*)* and *Shwitra- Shweta (*White*)* in colours, which manifest when vitiated *Doshas* enter at the level of *Rakta dhatu* (blood tissue), *Mamsa dhatu* (muscle tissue*)* and *Medho dhatu* (adipose tissue), respectively.
2. Acharya *Vaghbata* states that it is *Bahya Kushtha* [27] (external dermatosis) since it is localized on the skin without the deeper tissues being involved. Thus, it has been classified into three types based on involvement of vitiation *Dosha* and *Dhatua*, such as: [28, 29]

i. ***Vataja*:** It is *Mandala*-round shape, *Arunam* -reddish brown colour associated with *Parusham* -dry or rough, loss of hair and localized in *Rakta Dhatu*.

ii. ***Pittaja***: It is *Padmapatra pratika*, like a lotus petal in colour, and associated with Daha- burning sensation and localized in *Mamsa Dhatu*.

iii. ***Kaphaja***: *Shweta*- white in colour, *Snigdha*-unctuous, *Bahalam*-thick, *Ghana*-multiple macules or patches associated with

Kandu- itching and localized in *Medho Dhatu.*

3. As per Harita**,** vitiated *Vata*, along with *Pitta*, affects *Raktadhatu* and manifests *Pandura* Varna (yellowish white colored) macules on the skin, which is called *Shwitra.* [30]

4. According to Kashyapa, any changes of the skin colour towards white are called *Shwitra*, and there are five types.

SAMPRAPTI

Acharay Vaghbatta said that all the *Nidana* which are responsible for *Kustha* disease are also responsible for the appearance of *Shwitra*. Thus, the *Samprapti* of *Shwitra* is explained in the following steps of "*Satkriyakala*", such as:

1. ***Sanchya*:** In this stage, excessive and frequent use of one or all of the above-mentioned *Nidanas* (etiological factors) leads to the formation of *Aama* (toxins), which further vitiate *Tridosha.*
2. ***Parasar:*** Spread of Vitiated *Tridosha* after getting mixed with digestive juice (*Pitta*) and then *Rasa dhatu*, and so on, it spreads from one *Dhatu* to the next *Dhatu* as per the concept of *Ras-Rakta Samvhana*. Further, the vitiated *Doshas* spread from the *Koshtha* (alimentary tract) to the *Shakha* (body tissues, including skin).
3. ***Prakopa:*** Vitiates of *Tridosha*, especially *Pitta*, are more aggravated by further exposure to excessive intake of *Nidana*, which are responsible for *Shwitra*.
4. ***Sthan Samshraya:*** Vitiated *Doshas* move in *Triyakgata Siras* and get lodged in *Tamra* layer of *Twacha* (skin), causing *Sanga* or obstruction to the local *Rasavaha Srotas* (lymph or plasma carrying channels) and *Raktavaha Srotas* (blood carrying channels /malenocytes). The reason for *Doshadushya sammurchana* in the Tamra layer of *Twacha* is the presence of *Khavaigunya* (a deformity in the structural entity) in the respective areas of *Twacha*.
5. ***Vyakti***: Skin loss of one's own natural colour in patches due to the destruction of melanocytes by the *Kshaya* (decline) of local *Bhrajakapitta.* Further, the *Samprapti* continues, and the deeper *Dhatus*, like *Mamsa* and *Medas*, are also involved.
6. ***Bheda***: At this stage, the involvement of each *Dhatu* exhibits specific discoloration on the patches. *Doshas,* when settled in *Rakta Dhatu*, produce *Rakta varna; Mamsa Dhatu* produces *Tamra varna* and *Shweta varna* when settled in Medo *Dhatu*, respectively. These, when taken together, are invariably involved in different grades and produce white patches all over the skin's external surface, causing *Shwitra kushta*. Though all three *Doshas* are involved, mainly vitiated *Vata* and *Bhrajakapitta* are held responsible, as these two are responsible for maintaining the colour of *Twacha*.

SAMPRAPTI GHATKA

Dosha	***Tridosha (Kapha Pradhana)***
Dushya	*Rasa, Rakta, Mamsa and Meda*
Agni	*Jatharagnimandya* and *Dhatwagnimandya*
Srotas	*Rasavaha, Raktavaha, Mamsavaha* and *Medovaha*
Srotodushti	*Sanga*
Adhishthana	*Twak* (*Rakta, Mamsa* and *Meda*)
Udbhava sthana	*Amashaya (Twak)*
Roga marga	*Bahya*
Vyaktasthana	*Sharira (Twak)*

INVESTIGATIONS

The following investigations or tests, such as Routine Haematological and Urine, Anti-nuclear antibody (ANA), Anti-thyroid peroxidase antibody (ATPO), Antiparietal gastric cell antibody (APGC), Antithyroglobulin antibody (ATG), Glycaemia, Vitamin B12, Folic acid, TSH (Thyroid-stimulating hormone) and FT4 (Free T4), are to be ruled out as Vitiligo has been associated with multiple endocrine and immune disorders. [31]

***SADHYAASADHYATA* (PROGNOSIS)**

Sadhyaasadhyata refers to prognosis: *Shwitra*, which has been *Arakta Lomavat* (no red hairs), *Tanu* (thin), *Pandu* (white), *Nava* (acute), and raised upwards in the middle, is *Sadhya*/curable. While *Rakta Lomavat*, *Bahu* (extensive or thick or big patches), *Varshaganotpannam* (Chronic), contiguous patches of discoloration (*Sambandha Mandalam*), situated in lips, hands, feet, private parts, red hairs and burnt with fire (*Agnidagdha*) is *Asadhya* (incurable). [32]

***CHIKITSA* (MANAGEMENT)**

The vitiation of the *Tridosha* causes *Shwitra* (Vitiligo) and resides in the three *Dhatus*: *Rakta* (blood), *Mamsa* (muscle tissue), and *Meda Dhatus* (adipose or fat tissue). Therefore, the primary aim is to remove the aggravated *Doshas* by proper bio-purificatory procedures (*Samsodhana*).

Acharay Vaghbhat states that the *Shwitra* requires a quick approach towards management, because it becomes Asadhya-incurable very quickly, like fire in the forest.[33] Also, in Gada Nigraha, it is mentioned that the *Shwitra* should be treated

sooner than *Kushtha*, as it becomes incurable soon.[34] Treatments described under the section *Shwitra* are primarily combined formulations of topical or oral medications, herbal or herbomineral preparations, and single herbs that do not have specific names. The effect of the formulation may be due to increased immunostimulation, hepatic function and photoreaction. However, the treatment of Vitiligo needs a holistic approach, as it is an autoimmune dermatological disorder. The treatment involves following principles, such as:

1. ***Nidana Parivarjana:*** Vitiligo (*Shwitra*) is an autoimmune dermatological disorder; therefore, the basic principle "Prevention is better than cure" is the first step in the management of *Shwitra* or *Kilasa* and avoiding the indulgence in the causative factors of *Shwitra*, which are explained above under *Aharaja* and *Viharaja Nidana*.

2. ***Deepana* and *Pachana:*** The root cause for the manifestation of *Shwitra* in Ayurveda is *Aama* (metabolic toxin) resulting from *Mandagni* (hypo-functioning of metabolic fire). Thus, *Deepana* and *Pachana* treatments primarily aim to correct Agni (*Ghatragni* and *Dhatvagni*), thereby removing *Aama*. For *Deepana* and *Pachana* in children with *Shwitra*, single herbs or herbal combinations such as *Trikatu Churna*, *Panchakola Churna, Ajamoda Churna,* and *Chitrakādi vati* may be used for 5 to 7 days before *Samsodhana Chikitsa.*

3. ***Shodhana* (Bio-purification therapy):** The following Bio-purification therapy can be used for children suffering from *Shwitra*, based on *Dosha, Dushya, Kala, Prakurti, Vaya, Agni,* and *Bala.*[35]

- ***Sramshamana* therapy** [36]*:* In Charaka Samhita under *Kusthaadhayaya Sramshamana*, that is, therapeutic purgation, has been recommended as the primary treatment of *Shwitra* after gating *Deepana* and *Pachana* because the Vitiated *Doshas*, especially *pitta dosha*, spread in *Rakta*, *Mamsa* and *Medho Dhatu*.
- ***Raktamokshana (*Blood-letting*):*** It is an effective blood purification therapy by *Jalaukavacharana* (leach therapy) that decreases an increased level of Vitiated *pitta Dosha*, which are localized in the *Rakta Dhatu in Pittaja Shwitra*.
- ***Rukshana: -*** *Rukshana* can play an important role in the prevention and treatment of *Shwitra* by decreasing the *Kled* in Children suffering from Vitiligo by the administration of *Dravyas* like *Yava, Madhu, Arishta, Vyayama, Trikatu Churana, Triphala Churna* and *Udvartana*. Udvartana ensures the *pachana* of Vitiated *Doshas*, increases Agni at the level of *Twak*, and decreases *kleda* in the skin due to its dominance of *Ruksha guna*.
- ***Saktu*** [37] - administration of nutritious drinks and *Upavasa* (Therapeutic fasting) can also be given.

Shodhana Chikitsa is used to remove Vitiated Doshas and Ama (toxins) from the body, which are causes of *Shwitra* (Vitiligo), and to restore the equilibrium of *Tridosha* and stimulate *Agni*. More significant results can be achieved through an alternative *Shodhana* comprehensively followed by Shamana therapy. *Shodhana* should be carried out as per classical guidelines under the supervision of Ayurvedic paediatrics experts.

4. ***Shamana* (Palliative therapy):** Acharya Sharangdhar states that *darvyas*, those which do not expel the *Doshas* from the body, do not elevate or alleviate the Doshas present in normal amounts, but bring copious Doshas in their normal forms, thus curing the disease. [38] The following forms of Shamana therapy:

- **Internal Medicines:** The drugs having *Kushthaghna, Krimighna, Rakta Shodhana, Rasayana, Twachya,* and *Tridoshaghna* properties are beneficial in managing the disease *Shwitra* (Vitiligo). They not only break the pathogenesis of the diseases but also arrest their progress, i.e., prevent the self-destruction of melanocytes. The following are some classical medicines used internally:
  - ***Vati*** (Tablets)**:** *Vijayeshwara Rasa* (YR), *Shwitrari Rasa, Swayambhuva Guggulu, Brihat Swayambhuva Guggulu, Triphala Gutika,* (CS/CKD) *Dhatryadi Ghanavati* (BR), *Shashilekha Vati* (YR).
  - ***Churna*** (Powder)**:** *Bakuchyadi Churna, Kakodumbarikadi Yoga, Khadira Saradi Churna, Panchanimba Churna* (CS).
  - ***Kwatha*** (Decoction)**:** *Mahamanjishthadi Kwatha, Kakodumbarika kashaya, Khadiradi Kashayam* and *Dhatryadi Kwatha* (CS),
  - ***Asava–Arishta*** (Medicated fermented preparation)**:** *Madhwasava, Kanakabindvārista, Khadirārishta* (CS)
  - ***Avaleha*** (Medicated semisolid preparation)**:** *Bhallatak avaleha* (GN) and *Vidangadi loha* (AH).
- **External application (*Lepa*):** These are the local treatment methods of application of drugs. It is an application of drugs in the form of a layer or paste on the affected part. The categories of *Doshaghna Lepas* are used. Expose the lesion to early-morning sunlight for a few minutes, which brings out melanin in depigmented lesions. Be careful about exposing. Acharya Charaka has described six Lepa as local applications for *Kiasa*. The following are some classical *Lepa* that help remove harmful substances that hamper melanogenesis and stimulate melanogenesis.
  - *Kakodumbara, Avalguja, Chitraka, Gomutra* (CS),
  - *Shila, Vidanga, Kasisa, Rochana, Kanakapushpi* and *Saindhava Lavana* (CS)
  - *Avalguja biija, Laksha, Gopitta, Anjane-dwe, pippali* and *Lohabhasma* (CS)
  - *Avalguja biija, Makshika, Kakodumbara, Laksha, Lauha churna, Pippali, Rasanjana, Krishna tila* and *Gavam pitta* (CS)
  - *Avalguja biija, Haritala, Gomutra* (CS)
  - *Khilasahara lepa* (SS), *Shwitrahara lepa* (SS), *Tutthyadi lepa* (SS), *Shwitranashaka lepa* (BR), *Manasiladi Lepa, Triphaladi Lepa*, and *Vayasyadi Lepa*.
- ***Taila* (Medicated oil):** *Somaraji taila, Bakuchi taila, Aragwadhayadya taila, Aragwadhadi taila* (CKD), *Panchanana taila, Marichyadi taila* (CKD), *Visha taila* (YR), *Manasiladya taila* (RT), *Chitrakadya taila, Jyotishmati*

taila, Kushta kalanala taila, Kushtha raksasa taila. *Karpanpatru taila* (RRS).

- ***Ghrita*** (Medicated Ghee)**:** *Mahakhadira ghrita, Somaraji ghrita, Neelinyadi ghrita, Mahatiktaka ghrita* (CS), *Mahanila ghrita, Bhallataka Ghrita* (GN).

5. *RASAYANA* (REJUVENATIVE THERAPY)

Generally, skin diseases run a chronic course, and recurrence is very common. Rasayana drugs enhance the cure rate and prevent disease recurrence. Most of the drugs described for the management of skin diseases in Ayurveda have Rasayana properties, viz. Ashwagandha, Guduchi, Haridra, Shunthi, Pippali, Haritaki, Amalaki, Bhallataka, Chitraka, Bhringaraja, Nimba, Manjistha, etc. They exert a good degree of anti-inflammatory and immunomodulating effects. Chitraka Rasayana [39], Eindriya Rasayana [40], it is best for Roga Apunarbhava Chikitsa.

6. *PATHYAPATHYA* [41]

Nidanas of *Kushtha* are themselves *Apathya* for that disease *Shwitra*. The healthy dietetics and lifestyle to be followed in *Shwitra* can be summarized as follows:

- ***Pathya:***

1. *Aharaja:* *Purana Dhanya, Laghu anna, Yava, Mudga, Amalaki, Tikta Shaka, Ghrita, Triphalanimbayukta anna* and *ghrita, Tikta rasa pradhan dravya, Tamrajala, Khadirajala.*

2. *Viharaj:* *Abhyangam, Lepa, Snanam,* Exercises.

- ***Apapthya:***

1. *Aharaja:* *Guru anna, Amla-Katu- Lavana rasa, Matsya, Anupa pashu paksi mamsa, Dadhi, Dugdha, Madhu, Mulaka, Guda, Viruddhahara, Mithyahara.*

2. *Viharaj**:*** *Divaswapna, Chardivega nigraha, Ratrijagarana, Deva-guru ninda,* Excess *krodha*, *shoka* and stress & Strain.

CONCLUSION

Shwitra (Vitiligo) is a variety of *Kushtha roga* in which the nonexudative milky white-colored patches are manifested on the skin on any part of the body. It is a synonym for, or an advanced stage of, *Kilasa*, which is caused by the vitiation of *Kapha pradhana tridosha.* Among all the etiological factors, the intake of *Viruddhahara* and *Mithyahara* plays a significant role in the genesis of disease. Better results can be achieved by intermittent *Shodhana*, comprehensively followed by *Shamana* therapy; it is said to be *Krichrasadhya* (difficult to cure). Further, Ayurveda takes a different approach to understanding and treating *Shwitra* (vitiligo, also called leucoderma), which warrants extensive research. Although medicines and a holistic approach may offer significant benefits to patients with vitiligo, the scientific rationale for their use needs further exploration using modern research methods.

CONFLICT OF INTEREST: Nil.
SOURCE OF SUPPORT: Nil.

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