

AYURVEDIC AND MODERN INSIGHTS INTO SHWITRA (VITILIGO): A
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ABSTRACT

Shwitra is a chronic depigmentary disorder described in Ayurvedic classics under the broad spectrum of Kushtha. It is characterized by the loss of normal skin colour due to vitiation of Doshas and Dhatus, particularly Rakta, Mamsa, and Medas. In modern medicine, vitiligo is understood as an acquired autoimmune disorder marked by the destruction of melanocytes, leading to depigmented patches on the skin. Although vitiligo is not life-threatening, it causes significant cosmetic concern and psychological distress. Ayurveda offers a holistic understanding of Shwitra, emphasizing etiological factors such as Viruddha Ahara, improper lifestyle, and Karmaja causes, along with internal purification (Shodhana), palliative therapy (Shamana), dietary regulations, and rejuvenative measures. This conceptual review aims to explore and correlate the Ayurvedic pathogenesis, classification, and management of Shwitra with contemporary biomedical perspectives on vitiligo. An integrative approach combining Ayurvedic principles with modern insights may provide a comprehensive framework for better understanding and management of this condition.

Objectives

1. To study the concept of Shwitra as described in classical Ayurvedic texts.
2. To understand the etiopathogenesis of vitiligo from a modern medical perspective.
3. To analyze the similarities and differences between Ayurvedic and modern views on Shwitra (vitiligo).
4. To review Ayurvedic principles of management including Ahara, Vihara, Shodhana, and Shamana therapies.
5. To highlight the scope of an integrative approach in the management of Shwitra.

KEYWORDS: Shwitra; Vitiligo; Kushtha; Tridosha; Autoimmune Disorder; Ayurvedic Concept; Integrative Medicine.**1. INTRODUCTION**

Shwitra is an Ayurvedic term for a chronic skin disorder characterized by *white* (śveta) depigmented patches on the skin. Classical texts describe Shwitra as **twacchā-vai-varṇya** (skin whiteness) *without discharge*. It is non-infectious and distinct from leprosy (*kushṭha*), often affecting any age or sex. In modern terms, vitiligo is an acquired depigmenting disease (loss of melanocytes) presenting as well-demarcated milky-white macules and patches on exposed skin. Global prevalence is ~0.5–2%,

with no race/gender predilection, though dark-skinned individuals and exposed areas are more psychologically affected. Vitiligo significantly impairs quality of life, causing anxiety, stigmatization and depression in many patients.

2. Ayurvedic Perspective**Definition and Classification**

Ayurveda classifies Shwitra under **Kushta-Roga** (skin diseases) but emphasizes its non-contagious, dryness and

whitishness. As Charaka notes, Shwitra (also called *Kilāsa*) is “*tridoṣaja*” (involving Vāta, Pitta, Kapha) and presents as *darūṇam* (coppery), *varuṇam* (reddish), or *śvitrām* (whitish) patches when the doshas reside in Rakta (blood), Mamsa (muscle) or Meda (fat) dhatu respectively. Vagbhata and later authors emphasize the role of **doṣa predominance** in Shwitra. For example, *Vātaja Shwitra* produces dry, rough, reddish-white

lesions; *Pittaja* yields coppery-yellow patches with burning; and *Kaphaja* yields thick, white, itchy plaques. The underlying dhātu involvement (blood/muscle/fat) further refines the type (e.g. *Kilāsa* for Rakta, *Daruna* for Mamsa). Some texts also distinguish **Sahajā** (congenital) from **Agnijas** (acquired) cases of Shwitra, paralleling familial vs sporadic forms of vitiligo.

The following table summarizes key Ayurvedic types versus modern classifications

Ayurvedic (Shwitra)	Modern (Vitiligo)
Type by Dosh: - <i>Vātaja</i> : Dry, rough, red-black patches - <i>Pittaja</i> : Copper/lotus-colored, burning, hair loss - <i>Kaphaja</i> : White, thick, heavy, itchy	Type by Distribution: - <i>Nonsegmental (Generalized)</i> : Symmetrical widespread patches (common) - <i>Segmental</i> : Localized, unilateral/dermatomal distribution - <i>Focal/Acral</i> : Limited to specific areas (e.g. face, hands); <i>Universal</i> : near-total depigmentation
Origin: <i>Sahajā</i> (inborn) vs <i>Agnijas</i> (acquired).	

Nidāna (Etiology) and Samprāpti (Pathogenesis)

Ayurveda attributes Shwitra to a mix of internal (doṣic) imbalances and lifestyle factors. Charaka lists **sinful actions and mental factors** as causes: untruthfulness, disrespect to preceptors, **pragyāparādha** (intellectual error) and even past-life karma. “Viruddhahara” (incompatible/contrary diet) – for example fish with milk or sour foods – is explicitly mentioned as an important nidāna. These factors create *āma* (metabolic toxins) and vitiate **Vāta, Pitta, Kapha** in the body, disrupting normal skin pigmentation.

In *samprāpti*, the aggravated doṣas lodge in skin-related dhātus. Classically, Vāta, Pitta and Kapha disturb Rakta, Mamsa and Meda dhātus respectively, leading to pigment loss. Charaka and Sushruta describe Shwitra as primarily a *Rakta-pradoṣaja* vikāra (doṣa-dosha disorder of blood). Importantly, although dhātus themselves remain intact, their vitiation is **expressed in the twak (dermis)** as depigmented patches. Ayurvedic texts note that deeper tissues (dhātus) need not be destroyed; instead, the imbalance manifests superficially.

Traditional Treatments

Ayurvedic therapy for Shwitra has two limbs: **Śodhana** (purification) to remove doṣas, and **Śamana** (palliative/rejuvenative) to restore balance. Classical regimens often begin with Panchakarma:

- **Śodhana Therapies:** Purificatory procedures are strongly emphasized. Charaka recommends *Raktamokṣaṇa* (bloodletting via leech therapy, scarification or venesection) to expel vitiated rakta and toxins. *Virecana* (therapeutic purgation) is indicated especially for Kapha-predominant cases, while *Vamana* (emesis) may be used if doshas are of certain type. After Śodhana, *Śodhana-paryānkīya* therapies like *Virechana* and *Śamana* treatments are administered.
- **Śamana (Internal) Therapies:** A multitude of herbal formulations are employed. Many are *rasāyana* (rejuvenating) in nature. For example,

decoctions or powders containing **Bakuchi** (*Psoralea corylifolia*), **Manjishṭhā**, **Haridrā** and other *Śvitrakaraṇīya* herbs are given internally. Specific classical preparations include *Śvitrāhara kāṣāya* and various *avlehyas* (herbal jams) cited in Ayurvedic compendia. In clinical practice, formulations like **Aragvādādhī Taila** (processed herbal-mineral oil) applied topically and given as a gel have been tested. An RCT found that Aragvādādhī Taila (or its gel) combined with an internal *Rasāyana* powder yielded significant pigment regeneration in Shwitra patients. Other remedies (Bakuchi powder, Arogyavardhinī Vati, Śilājatu) are traditionally cited. Sesame oil, ghee, and honey are often used as *anuṣṭhāna* (adjuvants).

- **Local Applications:** Herbal pastes (*lepās*) and oils are applied directly to lesions. Common examples include *Bālyādi Lepa* (a paste of young shoots), *Vāgśunāghṛta* (medicated ghee), *Karanja taila* and *Bhringa taila*. Rajpoot et al. describe using **Pracchanna karma** (scarification bloodletting) plus *Bālyādi Lepa* to achieve repigmentation.
- **Diet and Lifestyle (Pathya-Āpaṭhya):** Nutritional therapy is critical. Ayurveda advises a **pāthya** diet: fresh, wholesome foods (milk, barley, ghee, turmeric, leafy greens, seasonal fruits) that nourish the skin and balance doṣas. Concomitantly, **āpaṭhya** (toxic) items are avoided – especially incompatible food combinations (e.g. fish with milk, sour + salty items), fermented, heavy fried foods, and excessive intake of salt, tamarind or citrus. Stress and lifestyle factors are also addressed: rest, moderate exercise, and mental poise are encouraged, as stress can aggravate doṣas (*pragyaaparadha*).
- **Rejuvenation (Rasayana):** After śodhana, *rasāyana* therapies are prescribed to rebuild dhātus. These may include tonics containing *Guduchi*, *Shatavari*, *Ashwagandha*, and minerals like *Shilājit*. In practice, Ayurvedic treatment of Shwitra often spans months and integrates herbs, detoxification, external therapies and dietary control.

3. Biomedical Perspective on Vitiligo

Etiology and Pathophysiology

Vitiligo is understood as a *multifactorial* autoimmune disorder. The hallmark is **melanocyte destruction** in the epidermis, resulting in depigmented macules.^[4] Genetic predisposition plays a role (~30% have a family history), with ~50 susceptibility loci identified (involving immune regulation and melanogenesis). Environmental triggers (sunburn, stress, chemicals) and metabolic factors (oxidative stress in melanocytes) contribute to onset. The predominant theory is autoimmunity: CD8+ T-lymphocytes and autoantibodies target melanocytes. Other proposed mechanisms include intrinsic melanocyte defects, a neurogenic hypothesis (toxic neuropeptides), and oxidative damage. Notably, nonsegmental vitiligo often co-occurs with other autoimmune diseases (thyroiditis, diabetes, pernicious anemia), underscoring its immune basis.

Clinical Features and Classification

Clinically, vitiligo presents as **sharply demarcated, milky-white macules or patches** on the skin, often symmetrically distributed. Common sites are the face (periorificial areas), neck, hands, knees and feet. The lesions are non-scaly and may slowly enlarge centrifugally. Early involvement of hair follicles produces depigmented (white) hair (*leukotrichia*). A positive *Koebner phenomenon* is seen in many patients (new lesions at sites of trauma).

Vitiligo is categorized by pattern

- **Non-segmental (Generalized) Vitiligo:** the most common form, with symmetric patches on both sides of the body.
- **Segmental Vitiligo:** unilateral, often dermatomal, typically with early onset and stable course.
- **Focal/Acral Vitiligo:** limited to areas like the fingertips, face or around orifices; *universal* vitiligo is a rare extensive form (nearly total depigmentation).

A comprehensive review notes subtypes (e.g. inflammatory/vitiligo punctata), but for clinical management the non-segmental/segmental dichotomy and extent (body surface area) are most relevant.

4. Modern Treatment Options

Topical Therapies: First-line treatments include **corticosteroids** (high-potency ointments) which suppress local autoimmunity. Tacrolimus or pimecrolimus (topical calcineurin inhibitors) are alternatives, especially on the face or in children. Vitamin D analogues (e.g. calcipotriol) are sometimes used. In 2022–23 the FDA approved **ruxolitinib cream** (a topical JAK inhibitor) for vitiligo, based on trials showing improved repigmentation on the face and neck. This marks the first targeted, non-steroid topical drug for vitiligo.

Phototherapy: The cornerstone is **narrowband UVB**

(NB-UVB) phototherapy (311 nm), given 2–3 times weekly. NB-UVB stimulates melanocyte proliferation and migration with a good safety profile, and has largely replaced older PUVA (psoralen + UVA) regimens. Excimer laser (308 nm) can treat small, stable patches. Phototherapy often yields ≥50% repigmentation after several months in many patients, especially those with a short disease duration.

Systemic Therapies: For rapidly progressive or widespread cases, systemic immunomodulation may be used. Short courses or monthly “mini-pulses” of oral corticosteroids can halt disease activity. Immunosuppressants (e.g. methotrexate, azathioprine) are occasionally tried off-label. Emerging systemic agents include oral JAK inhibitors (tofacitinib, ruxolitinib, upadacitinib) which have shown promise in case series. A clinical trial of oral upadacitinib reported greater repigmentation and quality-of-life improvement than placebo.

Surgical/Procedural Treatments: Stable, refractory patches can be treated by **skin transplantation** techniques. Methods include non-cultured melanocyte-keratinocyte cell suspension grafting, epidermal or punch grafts, and cultured epidermis with melanocytes. Good candidates are those with segmental or focal vitiligo, small body surface involvement, and stability for ≥6–12 months. These procedures can achieve excellent repigmentation in carefully selected patients. **Adjunctive measures** such as camouflaging cosmetics, sun-protection, and counseling are also integral to management.

5. Integrative Approaches

Given the chronic nature of vitiligo, some clinicians and patients combine Ayurveda with modern therapy. For instance, an integrative protocol might start with Ayurvedic **panchakarma** (e.g. raktamokṣaṇa) to “clear the blood,” followed by NB-UVB phototherapy and topical agents. Recent reviews of integrative dermatology note that various herbal and nutraceutical topicals (e.g. Bakuchi paste, Ginkgo extract, curcumin, vitamin D analogues) have been used **in conjunction** with phototherapy. One systematic review found clinical utility in many such formulations (Shwitrahara lepās, Psoralea oil, khellin, antioxidants) either alone or alongside UVB. In practice, adding Ayurvedic elements (like internal Rasayana powders or herbal pastes) may complement repigmentation, though high-quality evidence is limited. Importantly, any integrative regimen must be individualized and supervised, as herbal photosensitizers can cause irritation.

6. Clinical Evidence and Research

Several recent studies have evaluated both Ayurvedic and conventional treatments for vitiligo/Shwitra. Dhanik et al. (AYU journal) conducted a randomized trial comparing an Ayurvedic regimen (Bakuchi-*haritalā* paste plus oral blood-purifying herbs) against

conventional PUVA therapy in stable vitiligo. After 6 months, 68% of the Ayurvedic group achieved ~80% repigmentation, with no adverse effects, whereas 90% of the PUVA group improved but many had side effects (sunburn, itching). The authors concluded Bakuchi-based therapy was effective and better tolerated. Likewise, Makwana *et al.* (2022) found that topical **Aragvādādi** oil/gel combined with an internal *Rasāyana* significantly reduced vitiligo patch size and symptoms over 2 months. These trials support the pigment-regenerating properties of Ayurvedic formulations containing Bakuchi, Haritala (arsenic sulfide), and other herbs. Smaller case reports and series also document repigmentation with combined raktamokṣaṇa, śodhana and śamana therapies.

On the conventional side, large trials have validated modern therapies. Two phase-III RCTs (REVEAL 1 & 2, NEJM 2022) showed ruxolitinib 1.5% cream was significantly better than placebo for repigmenting vitiligo, particularly on the face. NB-UVB phototherapy has decades of evidence and is widely accepted. A Cochrane review and multiple meta-analyses conclude that potent topical steroids, calcineurin inhibitors and NB-UVB produce moderate to good repigmentation in many patients. Emerging therapies – from afamelanotide implants to JAK inhibitors and cytokine-blockers – are under active study.

Overall, while conventional approaches have more large-scale RCT data, Ayurvedic treatments are backed by some clinical studies and centuries of use. An integrative review notes that combining therapies (e.g. herbal topicals + phototherapy) may enhance results, but also warns of potential side effects.

Prognosis and Psychosocial Impact

Vitiligo/Shwitra is generally **difficult to cure fully**. Ayurveda regards long-standing, confluent patches (with red hairs or lip/palmar involvement) as *asādhyā* (incurable), whereas early, sparse lesions may be *sādhyā* (treatable). Modern medicine similarly notes that disease stability and early intervention predict better outcomes. Complete repigmentation is uncommon; treatments aim for halt of spread and partial repigmentation. Chronic cases can wax and wane. Even so, many patients achieve ≥50% repigmentation with combination therapy.

Crucially, the **psychosocial impact** of vitiligo is profound. Depigmentation of visible areas often leads to shame, social anxiety, and lowered self-esteem. Studies show patients frequently suffer depression, social phobia and even cognitive/emotional impairment due to vitiligo. The stigma can be so severe that it affects marriage prospects in some cultures. Both Ayurvedic and modern texts recognize the psychosocial burden; holistic management includes counseling and support.

In summary, Shwitra (vitiligo) is a complex pigment disorder. Ayurvedic texts provide a rich conceptual framework (dosha/dhatu theory) and various traditional

treatments (panchakarma, herbs, diet) that aim at root causes. Modern research elucidates an autoimmune, genetic basis and offers evidence-based therapies (phototherapy, immunomodulators, JAK inhibitors). Integrative care – thoughtfully combining the strengths of both systems – may offer additional benefit in selected patients. Ultimately, management must be individualized, combining medical therapy with psychological support and lifestyle measures.

Sources: Classical Ayurvedic texts (Charaka, Sushruta, Kāśyapa) and recent research reviews and trials. The evidence base includes peer-reviewed journals in both Ayurveda (AYU, JAIMEs) and dermatology (StatPearls, MDPI, NEJM, etc.), as cited above.

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