

# **Allopathic and Ayurvedic Approaches to Leucoderma (by Rama D. Napolitani C.A.S)**

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## **Introduction**

Leucoderma, also known as vitiligo is a skin disorder that affects nearly 2% of the world population. [1] Allopathy, the system of medicine in widespread practice today offers palliative measures, but no cure. By contrast, the Charaka Samhita , a two thousand-year-old Indian Ayurvedic text [2] , provides a description of leucoderma with recommendations for treatment . In this paper, the modern medical understanding and treatment of leucoderma will be discussed. Then, a detailed Ayurvedic analysis and approach to management will be presented.

## **Modern Medicine and Leucoderma**

Leucoderma, a Latin word, meaning 'white skin' is caused by the destruction of melanocytes; the cells responsible for skin color. There are many theories as to what may be responsible for causing leucoderma. Researchers have suggested an auto-immunological, neurological or auto-cytotoxic origin. None of these have been proven definitive. [3] The disorder is said to affect all races and genders equally and in 95% of cases, leucoderma manifests before age 40. [4] As for a possible hereditary link, approximately one third of cases report a family history. The most commonly afflicted areas of the body are the sun-exposed tops of hands and faces, and hyper-pigmented areas of the body, such as the groin, nipples, genitalia and axilla. [5] The disorder is not infectious, nor does it cause pathological harm. However, leucoderma does leave the skin aesthetically disfigured, often causing psychological and emotional stress.

In consideration of no known medical cure, allopathic treatment of leucoderma offers two approaches to the management of this disorder: protection of depigmented patches and repigmentation therapies. Due to the absence of melanocytes in depigmented skin, the body is unable to provide adequate UV light shielding from the harmful rays of the sun; thus protection of depigmented patches is of paramount importance. To minimize exposure to UV concentrated light, protective measures are encouraged, such as the application of Sunscreen 15-30 SPF or the use of protective clothing. 5 In addition to protecting leucodermic patches, many cosmetic products are available that act to camouflage the affected skin.

The second approach to the management of leucoderma focuses on repigmentation therapies. Common therapies are of three types: The topical application of potent corticosteroids, (PUVA) psoralen photochemotherapy and surgical therapies. Of these interventions PUVA is considered the

most effective treatment available in the United States, however the treatments are time-consuming, side effects can be severe, and complete repigmentation only occurs in 15-20%. Interestingly, psoralens used with photochemotherapy are obtained from the ancient Ayurvedic herb known as Vakuchi (*psoralea corylifolia*). [6]

## Ayurveda<sup>[1]</sup> and Leucoderma

Ayurveda, a Sanskrit term meaning 'science of life', is said to be the most ancient system of medicine in widespread practice today. In fact, the archeological findings of the 'Bower Manuscripts' support the notion that Ayurveda has been in continuous practice for more than two millennia. [7] The practice of Ayurveda finds its roots in a body of knowledge and principles that were systematized in the Charaka Samhita, a treatise written more than two thousand years ago. In this ancient text a description and treatment for leucoderma is discussed. However, the basic theory, principles and objectives of Ayurveda will first be presented.

Ayurveda, an ancient healing system and a medical science, first seeks to restore, then maintain Svastha of the body and mind. Svastha, meaning health in English, has a definition in Ayurveda that, when fully understood, sheds much light on the objective of this system of medicine. Health is defined "as physical and mental well-being; freedom from disease, pain, or defect; normalcy of physical and mental functions; soundness." [8] Ayurveda, defines Svastha in Sanskrit as:

"sama dosah samagnis ca sama dhatu mala kriyah prasannatmendriya manah svastha ityabhihiyate (Sushruta Samhita, 15.38)

One who is established in Self, who has balanced doshas, balanced agni, properly formed dhatus, proper elimination of malas, well functioning bodily processes, and whose mind, soul, and senses are full of bliss, is called a healthy person ." [9]

In this Ayurvedic definition of health, not only is the western concept of health encompassed, but there are other layers, that of the doshas, agni, dhatus, and malas. Hence, Ayurveda views health as a balance of the doshas which are vata, pitta, kapha<sup>[2]</sup> (in consideration of one's prakruti), properly formed/functioning dhatus (seven tissues of the body), and proper elimination of malas (waste products). Thus, when Ayurveda looks at a disease such as leucoderma, invariably, these aforementioned factors are taken into account and discussed. Unique to Ayurveda, is its understanding and articulation of disease.

In western medicine when a disease or a group of symptoms is examined, analyzed, then given a name, the disease has been 'diagnosed'. In contrast, the Ayurvedic approach to disease diagnosis seeks first to define its' root, or its' roganam mulakaranani; [10] it is considered as important to define the root of a disease as it is to name a disease.

In Ayurvedic medicine, the process by which a disease is understood and diagnosed is called sarvaroga nidanam and is composed of five parts: nidanam (causative factors or etiology), purvarupa (earliest signs/symptoms), rupa (clinical signs/symptoms), samprapti (pathogenesis of the condition), and upasaya (diagnostic tests). [11] Traditionally, when a disease is being discussed, the five parts of the sarvaroga nidanam will be presented. Indeed, the ancient Ayurvedic text, Charaka Samhita, presents skin disease (kustha) following this format.

## Classical Ayurveda and Svitra

In Ayurvedic classical literature, such as the Charaka Samhita, leucoderma also known as 'white leprosy' is called svitra or kilasa. [12] It is within volume III, chapter VII of this aforementioned text where "kustha (obstinate skin diseases) and leucoderma are discussed. The sarvaroga nidanam of kustha and svitra share many common threads as will now be presented. [13]

## Nidanam

The development of leucoderma in an individual is said to be caused by the incorporation of the

following unwholesome regimes into their life:

- “Intake of mutually contradictory food, and drinks which are liquid, unctuous and heavy;
- Suppression of natural urges;
- Performance of physical exercise in excessive heat and after taking very heavy meals;
- Transgression of the prescribed order of the intake of food and with reference to heat and cold, as well as fasting;
- Use of cold water immediately after exposure to scorching sun, exertion, or exposure to frightening situations;
- Intake of uncooked food and/or intake of food, before the previous meal is digested;
- Excessive intake of food prepared of freshly harvested grains, curd, fish, salt, and sour substances.
- Untruthfulness, ungratefulness...insult of preceptors, sinful acts... misdeeds of past lives.

### **Purvarupa (earliest signs/symptoms)**

- Excessive or absence of perspiration;
- Discoloration of patches on the skin;
- Horripilation, itching, pricking pain, physical exhaustion, mental fatigue

### **Rupa (clinical signs/symptoms)**

- Daruna- when dosha (chiefly) vitiates the rakta or the blood, the patches will be red in color.
- Caruna- when dosha (chiefly) vitiates the mamsa or the muscle tissue, the patches will be coppery in color.
- Kilasa- when dosha (chiefly) vitiates the medas or the fat, the patches will be white in color.” [This is the most common rupa (clinical presentation) of svitra hence leucoderma is often called kilas]

### **Samprapti (pathogenesis of the condition)**

In the Charaka it says the three vitiated dosha mix with the dhatus, namely the rasa, rakta, mamsa, medas, and result in the white patches. “Ayurveda maintains that leucoderma is caused by some morbidity of the liver” which is a vitiation of pitta. [14]

Below in table 1, is the authors' rendition of a samprapti for leucoderma. The format used for presentation was designed and created by Dr. M. Halpern as a tool to articulate a disease process.

**Table 1 : Samprapti and Herbal Chikitsa Summary -Vata-Pitta type Leucoderma**

{vata <sup>i</sup>[3] pushing pitta, or primary pitta vitiation}

Stage	Evidence	Dosha	Sub-dosha	Dhatu	Srota	Ca
A/A	Possible constipation and gas	Vata	Apana	Rasa	Purishavaha srota	La De

<b>O</b>	<b>Mild, transient systemic dryness</b>	<b>Vata</b>	<b>Vyana</b>	<b>Rasa</b>	<b>Rasavaha srota</b>
<b>O</b>	<b>Mild transient feeling of cold</b>	<b>Vata</b>	<b>Vyana</b>	<b>Rakta</b>	<b>Raktavaha srota</b>
<b>RMD</b>	<b>White skin patches with irregular edges, asymmetry</b>	<b>Vata</b>	<b>N/A</b>	<b>Rasa, Rakta, Mamsa, Medas,</b>	<b>Rasa, Rakta, Mamsa and Medo vaha srota</b>
<b>RMD</b>	<b>Decreased Sweat</b>	<b>Vata</b>	<b>Vyana</b>	<b>Rasa</b>	<b>Rasavaha srota</b> <b>Svedavaha srota</b>
<b>RMD</b>	<b>Worry/anxiety</b>	<b>Vata</b>	<b>Vyana</b>	<b>N/a</b>	<b>Manovaha srota</b>
<b>A/A</b>	<b>Possible loose stool, burning indigestion</b>	<b>Pitta</b>	<b>Pachaka</b>	<b>Rasa</b>	<b>Annavaha srota</b>
<b>O</b>	<b>Transient mild burning mucus membranes</b>	<b>Pitta</b>	<b>N/A</b>	<b>Rasa</b>	<b>Rasavaha srota</b>
<b>O</b>	<b>Transient mild feelings of warmth</b>	<b>Pitta</b>	<b>Ranjaka</b>	<b>Rakta</b>	<b>Raktavaha srota</b>
<b>RMD</b>	<b>White symmetrical skin patches</b>	<b>Pitta</b>	<b>Bhrajaka</b>	<b>Rasa</b>	<b>Mamsavaha srota, medovaha srota</b>
<b>RMD</b>	<b>Excessive sweating</b>	<b>Pitta</b>	<b>N/A</b>	<b>Rasa</b>	<b>Rasavaha srota</b> <b>Svedavaha srota</b>
<b>RMD</b>	<b>Anger, criticism</b>	<b>Pitta</b>	<b>Sadhaka</b>	<b>N/A</b>	<b>Manovaha srota</b>

In the above samprapti, it is indicated that vata dosha accumulates in the purishvaha srota resulting in poor elimination, then overflows into the rasa and rakta dhatu. When vata relocates to the rasa and rakta dhatu it results in deficient flow through the rasa and raktavaha srota. Coupled with pitta vitiation, in due course, an altered functioning of the liver<sup>1</sup> 6 occurs, which in turn contributes to impaired elimination/management of impurities in the body. It is understood in Ayurveda, that deficient flow through the raktavaha srota vitiates posaka rakta (the building blocks of the mamsa dhatu). [15] Since the mamsa dhatu is responsible for healthy skin, it stands to reason that an impairment of the skin may result. In essence, an accumulation of vata and pitta dosha and ama (toxins) in the srotas and dhatus is resulting in impaired function, as well as inferior production, of tissue. Consequently, one can understand why the Charaka says, "The patient of svitra should (first) be cleansed by the administration of elimination therapies and thereafter" [16] employ other measures. Thus it is essential that ama and excess dosha be expelled from the body, only then can the restoration of healthy tissue commence. Next, Ayurvedic treatments (chikitsa) for leucoderma will be discussed.

## Chikitsa (Overview)

An Ayurvedic treatment plan starts with measures to arrest the ongoing aggravation of dosha in the body. The digestive track is targeted first with the implementation of a dosha appropriate diet. For example, if pitta-dosha aggravation were present, then a pitta pacifying diet would be implemented. Salt intake should be minimized and restricted to rock salt only, as this will further expedite recovery from kilas. [17] Concomitantly, lifestyle would be closely evaluated for possible nidanam (causative factors), and these would be corrected. Once all correctable causative factors such as lifestyle and diet have been addressed, proper eliminative measure would be taken to facilitate the removal of ama (toxins) and excess dosha from the body. Eliminative measures must initially be employed, taking into consideration a patients' agni and level of ojas, then might herbal remedies prove effective. Purification kriyas such as oleation (application of oil), svedana<sup>[4]</sup> (fomentation or heat therapy) and vrechana (purgation) are employed to (1) "loosen and liquefy ama" and excess dosha from the various sites of accumulation in the tissue, (2) mobilize ama and excess dosha, (3) facilitate removal of ama and excess dosha from the body. [18] An additional manner of purification often mentioned with leucoderma is called rakatamoksha (therapeutic bloodletting). In this treatment, excess pitta dosha in the rakta dhatu is being removed via one of the following methods:

- Removal of 300cc of blood via venipuncture (performed following oleation and svedana) [19]
- Topical application of leeches to affected areas.

A case study published in 2004 demonstrated complete resolution of vitiligo in a six year old boy whom had incorporated raktamoksha (per topical application of leeches) in his Ayurvedic treatment plan, "There was a marked difference in the skin color after the first (application). The skin started to appear pink. After a period of 2 ½ weeks leeches were applied again, the client continued with herbs and the local application of Bakuchi oil. Gradually the skin started getting back it's brownish hue, the hair on the scalp that had turned white at the patch started turning black again...patches regained their color fully after a period of two months" [20] With proper elimination of excess dosha and ama, then herbal remedies may prove effective.

## Herbal Chikitsa

An abundance of herbs are mentioned in the Ayurvedic texts, many of which are readily available today. Several of these herbs have been studied in Indian laboratories. Interestingly, properties identified in the lab often support the Ayurvedically identified properties. For example, Khadira (acacia catechu), as a decoction, is recommended for treatment of leucoderma.<sup>1 6</sup> The rasa of Khadira is bitter and astringent. Its' virya is cold, and its vipaka is pungent. It is said to balance both Pitta and kapha dosha. Laboratory studies have identified constituents shown to regenerate liver cells, as well as providing anti-fungal and anti-inflammatory effects. [21] A decoction of khadira and amla is recommended as a two-ounce dose every morning.<sup>1 7</sup>

Another herb, Vernonia anthelmintica (somaraja/kattu-shiragam/purple fleabane), is also reported to be an effective remedy for vitiligo. The rasa is bitter, virya is warm and the vipaka is pungent. In the Indian Materia Medica a few remedies with this herb are mentioned: (1) The powdered seeds of this herb taken with a decoction of emblic myrobalans (amalaki or nellikkai) and catechu. (2) The powdered seeds taken alone (1 tsp.) (3) The powdered seeds taken with black pepper or black sesame seeds in equal parts, daily in the morning, with warm water, just after perspiring. It is indicated that if one of the above methods is followed for one year, resolution of vitiligo will occur. [22]

However, the one herb most often mentioned with leucodermic treatment is Vakuchi (psoralea corylifolia Linn). This herb is recognized as being helpful for treatment by all the major medical disciplines, Ayurvedic, Chinese, Unani, as well as Western medicine. Vakuchi, also called Bakuchi or karpkarishi has a pungent and bitter rasa, a warm virya, and a pungent vipaka. [23] Most sources suggest taking vakuchi internally as well as topically. The seeds, as a powder (churna), are recommended for internal use. The parts of the plant used for topical applications are the essential oil extracted from the seeds, or a medicated oil prepared from the seeds. As a diluted essential oil, when topically applied to white depigmented patches, it is reported to act "on both the Rouget's

cells and the melanoblastic cells of the skin...stimulation (of these cells) by the oil leads them to form and exude pigment which gradually diffuses into the decolorized areas." [24] Other methods of preparation and administration of this herb are as follows:

- The paste of the seeds made with milk is rubbed into the affected parts of the skin. However if continuous application irritates the skin, the treatment should be discontinued for some time.<sup>2</sup> 5
- Equal parts of the seeds of Vakuchi, seeds of chakramarda (cassia tora), and the wood of Mahanimba (melia azdarach or persian lilac) made into a paste with rose water is applied over the white patches. The persian lilac can be substituted with Nimba (Indian lilac or neem) berries. [25]
- Another formulation including vakuchi, Pancha-nimba gutica or Pancha-amrita is recommended in daily doses of 4 drachms (this is equal 1 tablespoon). To prepare, take the five different portions of the neem tree, namely the flowers, fruits, leaves, bark, and roots 15 parts each powdered to 1 part each of the following substances: iron oxide, chebulic myrobalans, seeds of cassia tora, triphala, fruit of Semecarpus anacardium, embelia ribes, sugar, emblic seeds, curcuma longa, long pepper, black pepper, dry ginger, seeds of psoralea corylifolia, pods of cassia fistula and tribulus terrestris all powdered. Mix all together and make into paste in the juice of eclipta erecta. Then mix with the decoction (1 in 8) of the bark of acacia catechu. [26]

A final area of treatment comes into focus when considering the last nidanam (causative factor) of this disorder which is, "untruthfulness, ungratefulness...insult of preceptors, sinful acts... misdeeds of past lives." This nidanam has its' roots in the concept of karma. The law of cause and effect can be seen manifesting in many diseases afflicting our society. A person smoking daily for the past 30 years, who is discovered to have lung cancer, illustrates the concept of karma in action. Lung cancer is the effect. Smoking a known carcinogen, daily for 30 years, is the cause. This is a simplified example of karma. A more complex example is the all too often 60-year-old obese male with elevated cholesterol complaining of severe sudden chest pain. After presenting to the hospital with elevated troponin levels and tombstone t-wave elevations per EKG, he is informed he is having a massive heart attack. When cardiac catheterization reveals that some of the arteries leading to his heart are severely occluded, he is told that the cause of his heart attack is the severe arterial sclerosis, which was caused by his elevated cholesterol. He might then be told that the poor diet and absence of exercise that he reports caused his elevated cholesterol. In essence this is karma in action. The cause is a life long poor diet, coupled with the absence of exercise, resulting in elevated lipid levels, ultimately leading to the massive heart attack. While many behaviors are clear causes of disease, others are much subtler. Ayurveda encourages a regular practice of self-introspection such as meditation, by which an awareness and clarity of judgement develops. People shower and brush their teeth often to maintain cleanliness of body and mouth. A regular practice of meditation can provide a similar cleansing, of the mind and thoughts. Clarity of mind produces balanced judgment and right decisions which in turn promote right actions, hence healthy results.

"Character is nurtured midst the tempests of the world" -Goethe

Having once been rough and jagged, the weather worn surface of an ocean cliff is only now smooth and beautiful due to the indiscriminant sculpturing of powerful ocean waves. So too do the trials and tribulations of life have mysterious ways of sculpting beauty out of humanity. Perhaps disease is a method nature uses to sculpt and refine creation. Vitiligo like any other ailment affecting humanity is a manifestation of disease. In this paper its roots have been articulated, and Ayurvedic remedies presented. In Western medicine, reduction of symptoms alone is all too often the result. However, leucoderma stubbornly refuses to be cured by allopathic methods. On the other hand, many cases of leucoderma have been resolved with Ayurveda. The key to successfully treating disease is a comprehensive approach. Ayurveda offers this. The key to resolving Disease is to treat the root. Ayurveda offers this. Finally, the key to restoring health is to address the individual as a WHOLE. Ayurveda achi

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[6] <http://www.telemedicine.org/botanica/bot5.htm>