

Review Article

A review of Vitiligo and its Homoeopathic Management

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ABSTRACT

Vitiligo is an autoimmune disease characterized by selective loss of melanocytes that causes loss of skin color in patches which are non-scaly, chalky-white macules. The prevalence of vitiligo ranges from 0.5% to 1% of the population worldwide. It is caused by the lack of a pigment called melanin in the skin. Most of the patients develop the disease before the age of 20 years. Vitiligo can appear anywhere on a person's skin, on the hands, face, and areas around body openings including the genitals. Conventional management and treatment of vitiligo includes phototherapy, use of skin camouflage cream, use of sunscreen lotion SPF ≥ 30 , steroidal creams, etc. All of these treatments have their own side effects. An individualises Homoeopathic approach have given positive results in the treatment of vitiligo. This review outlines the current knowledge on vitiligo and attempts to give an critique of the future in vitiligo treatment.

Keywords: Homoeopathy, Vitiligo, Leucoderma, White Patch

Vitiligo is a chronic autoimmune disorder characterised by white patches on skin caused by loss or destruction of pigment cells (melanocytes). Vitiligo can affect any area of the skin, but it commonly occurs on the face, neck, hands, and body openings such as mouth and genitals. The condition tends to progress over time, with larger areas of the skin losing pigment. It is a common disorder, affecting around 0.5 % to 1 % of the population worldwide.

However, many cases may not be reported, and some researchers suggest the condition may affect up to 1.5 percent of the population. While the condition may be more noticeable in dark-skinned people, it occurs with similar frequency in all ethnic groups [1]. The exact cause of vitiligo remains unidentified, although various theories attempt to elucidate its development. Clinically, vitiligo manifests as white patches on the skin, typically appearing symmetrically and being more noticeable in individuals with darker skin tones. These patches are defined by distinct, pearly white or depigmented areas in oval, round, or linear shapes. Their borders are typically convex and can vary in size from a few millimeters to centimeters, with a tendency to expand outward [16].

A skin biopsy can definitively tell the difference between missing melanocytes, which indicates vitiligo, and melanocytes that are malfunctioning for another reason. There are two types of vitiligo- generalized and segmental. Segmental vitiligo is a less common form of the disease while nonsegmental vitiligo is the more common form. However, segmental vitiligo develops more commonly than nonsegmental vitiligo in younger children [1].



Figure 1; [17]

Epidemiology and pathogenesis

Vitiligo affects individuals of all ethnicities and ages, with a reported prevalence ranging from 0.5% to 2% worldwide. The condition often manifests in early adulthood, with approximately half of affected individuals experiencing onset before the age of 20. Vitiligo affects individuals of all genders and ethnic backgrounds, but there may be variations in prevalence among different populations [2]. The exact pathogenesis is not fully understood, but it's believed to involve a combination of genetic, environmental, and immunological factors.

- Genetic predisposition:** Multiple genes have been linked to the onset of vitiligo, encompassing those associated with melanocyte function, immune regulation, and oxidative stress. Genome-wide association studies (GWAS) have pinpointed various susceptibility loci, including TYR, PTPN22, and NLRP1 [3].
- Autoimmunity:** Disruption of immune system function is pivotal in vitiligo development. Central to the

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pathogenesis is the autoimmune attack on melanocytes by cytotoxic T lymphocytes (CTLs). Elevated levels of proinflammatory cytokines, including interferon-gamma (IFN- γ) and tumor necrosis factor-alpha (TNF- α), are commonly noted in vitiligo lesions [4].

3. **Oxidative Stress:** Increased oxidative stress within the skin microenvironment has been implicated in the pathogenesis of vitiligo. Reactive oxygen species (ROS) can damage melanocytes and trigger apoptosis, leading to depigmentation [4].
4. **Intrinsic defect of melanocytes:** Melanocytes exhibit an inherent abnormality that hinders their proliferation and differentiation even under conditions conducive to normal melanocyte growth [4].
5. **Neural factors:** Recent findings indicate that neural elements, encompassing neurogenic inflammation and neurotransmitters, might play a role in vitiligo's pathogenesis, potentially disrupting melanocyte function and immune regulation [4].

Etiology and risk factors

1. **Gender and Ethnicity:** Vitiligo affects individuals of all genders and ethnic backgrounds, but there may be variations in prevalence among different populations [5].
2. **Genetic predisposition:** A family history of vitiligo stands out as one of the most significant risk factors, indicating a genetic involvement in the disease. Those with a first-degree relative affected by vitiligo are at an elevated risk of developing the condition themselves [5].
3. **Autoimmune diseases:** Vitiligo frequently coexists with other autoimmune conditions, including autoimmune thyroid diseases (like Hashimoto's thyroiditis and Graves' disease), autoimmune adrenal insufficiency (such as Addison's disease), and autoimmune gastric diseases (like pernicious anemia [5].
4. **Stress:** Melanocyte pigment production can vary due to multiple factors, including emotional stress and physical trauma, especially after an injury [5].
5. **Environmental Triggers:** Environmental factors, including exposure to ultraviolet radiation, chemicals, and psychological stress, are considered triggers for the onset or worsening of vitiligo. UV radiation-induced oxidative stress and immune dysregulation are believed to play a role in the development of vitiligo [6].

Types of vitiligo-

There are 2 main types of vitiligo:

- Non-segmental vitiligo
- Segmental vitiligo

In some cases, there is a combination of both segmental and non-segmental, a condition referred to as mixed vitiligo.

1. **Non-segmental Vitiligo:** Non-segmental vitiligo, also referred to as generalized or bilateral vitiligo, is the predominant form. It usually manifests as bilateral and symmetrical depigmentation, impacting both sides of the body similarly.

Non-segmental vitiligo includes various subtypes:

- **Generalized:** Patch sizes vary and can appear anywhere on the body.

- **Acrofacial:** Patches mainly affect the fingers, toes, and face.
 - **Mucosal:** Patches develop around mucous membranes, like the lips or genital area.
 - **Universal:** A rare type where patches cover most of the body.
 - **Focal:** Often seen in children, patches are limited to a small area.
2. **Segmental Vitiligo:** Segmental vitiligo is defined by depigmented patches localized to one side or segment of the body. Less common than non-segmental vitiligo, it affects only one skin segment and usually stops expanding after the initial patch forms [7].
 3. **Mixed Vitiligo:** Mixed vitiligo describes cases displaying characteristics of both non-segmental and segmental vitiligo. This variant may show bilateral, symmetrical patches alongside unilateral, segmental patches [7].

Signs and Symptoms of Vitiligo:

1. **Depigmented Patches:** The main indicator of vitiligo is the appearance of depigmented or hypopigmented patches on the skin. These patches are defined by the absence of melanin pigment, leading to areas of lighter or white-colored skin. They can vary in size, shape, and distribution, occurring anywhere on the body, including the face, hands, arms, feet, and genital area [8].
2. **Symmetrical Distribution:** In many cases, vitiligo patches exhibit a symmetrical distribution, meaning they appear on both sides of the body in a corresponding pattern. This bilateral symmetry is characteristic of non-segmental vitiligo, the most common type of the condition [9].
3. **Marginal Depigmentation:** Vitiligo patches often have irregular or jagged borders, with gradual blending into the surrounding normal skin. This marginal depigmentation is a common feature observed in vitiligo lesions [10].
4. **Koebner Phenomenon:** In some cases of vitiligo, individual may encounter the Koebner phenomenon, where new depigmented patches emerge at sites of skin trauma or injury. This reaction can be activated by friction, cuts, burns, or other forms of physical skin trauma [9].
5. **Hair Depigmentation:** In addition to skin depigmentation, vitiligo can also affect the hair, leading to premature graying or loss of pigment in the hair follicles. This hair depigmentation may be observed in areas adjacent to vitiligo patches [9].
6. **Mucosal Involvement:** In certain instances, vitiligo can impact mucous membranes, including the lips, mouth, nostrils, and genitals. Involvement of mucosal areas can lead to depigmentation, which may be particularly noticeable in individuals with darker skin tones [8,9,10].

Differential diagnosis of vitiligo

1. **Pityriasis Alba:** Common in children and young adults, presenting as pale, scaly patches on the skin, but lacking the well-defined borders and depigmentation of vitiligo [13].
2. **Post-Inflammatory Hypopigmentation:** Associated with trauma or inflammation, with skin discoloration

typically linked to a history of trauma or inflammation in the affected area [13].

3. **Tinea Versicolor:** Resulting from a yeast infection, tinea versicolor causes discolored patches on the skin, usually lighter or darker than the surrounding skin and may have a fine scale [13].
4. **Chemical Leukoderma:** Induced by exposure to certain chemicals, localized to areas where the chemical exposure occurred, unlike vitiligo [13].
5. **Albinism:** Genetic condition characterized by a lack of melanin production, resulting in generalized pigmentation loss, distinguishable from vitiligo by its genetic origin and absence of depigmented patches [13].
6. **Leprosy:** Can cause skin depigmentation, but typically presents with other symptoms such as skin nodules and sensory loss [13].

Diagnosis of Vitiligo

1. **Clinical Examination:** The diagnosis of vitiligo is primarily based on a thorough clinical examination by a dermatologist or healthcare provider. The characteristic depigmented patches on the skin are usually sufficient for diagnosis.
2. **Wood's Lamp Examination:** A Wood's lamp also referred to as a blacklight, can assist in diagnosing vitiligo. When exposed to the ultraviolet light emitted by the Wood's lamp, vitiligo patches become more visible due to their pigment deficiency, appearing as blue-white fluorescence.
3. **Dermoscopy:** Dermoscopy, also called dermatoscopy or skin surface microscopy, may be used to examine vitiligo lesions in more detail. Dermoscopic features of vitiligo include loss of pigment, white dots, and perifollicular pigmentation.
4. **Histopathological Examination:** In some cases, a skin biopsy may be performed to confirm the diagnosis of vitiligo and rule out other skin conditions. Histopathological examination of the biopsy specimen may reveal the absence of melanocytes in the affected skin.
5. **Autoantibody Testing:** Autoantibody testing may be conducted to assess autoimmune activity in individuals with vitiligo. Elevated levels of autoantibodies targeting melanocytes, such as anti-melanocyte antibodies (AMA), may support the diagnosis of autoimmune vitiligo.
6. **Assessment of Disease Activity:** In addition to diagnosing vitiligo, healthcare providers may assess disease activity and monitor disease progression over time. This may involve evaluating the extent of depigmentation, the presence of new lesions, and changes in existing lesions [8,9,10].

Psychological Impact and Quality of Life in Vitiligo: Vitiligo can profoundly affect individuals' psychological well-being and their quality of life. The visible depigmented patches often lead to self-consciousness, diminished self-esteem, and negative body image. Consequently, individuals may withdraw socially, avoid certain activities, and encounter challenges in forming relationships.

1. **Stigma and Social Stigmatization:** Vitiligo's visible nature can trigger psychological distress, such as embarrassment, shame, and social stigmatization. This visibility may elicit negative responses from others, including teasing, bullying, and discrimination [11].

2. **Body Image and Self-Esteem:** Vitiligo's impact on body image and self-esteem can be particularly pronounced in individuals with visible lesions on exposed areas of the body, leading to feelings of self-consciousness, low self-esteem, and negative body image.
3. **Emotional Distress and Depression:** Living with vitiligo can be emotionally taxing and may contribute to symptoms of depression and anxiety. Feelings of sadness, frustration, and hopelessness related to appearance and social interactions are common among individuals with vitiligo.
4. **Impact on Quality of Life:** Vitiligo significantly affects various aspects of quality of life, including interpersonal relationships, social activities, and occupational functioning. The visibility of vitiligo lesions may lead to avoidance of social situations and limitations in daily activities.
5. **Coping Strategies and Support:** Coping strategies and social support are crucial in helping individuals manage the psychosocial impact of vitiligo. Supportive relationships, counseling, and participation in support groups can offer emotional support and improve coping mechanisms [12].

Homoeopathic Approach

Homeopathy is based on the principle that substances, whether plant, animal, mineral, or metal, can be used as medication if they can affect human health when prepared in the right form. Homeopathic remedies are created through serial dilutions and a process known as succussion or potentization, which removes any traceable material from the solution, making it safe even for toxic substances that could be harmful otherwise. The symptoms observed when homeopathic compounds are tested on healthy individuals, known as "proving," are used as the basis for prescribing them to those with similar symptoms. Homeopathy follows the principle of Similia Similibus Curentur, which means "let like be treated by like," thereby considering both the causes and effects of diseases. In treating conditions like vitiligo, homeopaths have observed that lesions may stop spreading, existing ones may not enlarge, and new lesions may not appear. Additionally, repigmentation may occur, and the borders of formerly diffuse lesions may become more defined, indicating a halt in their spread. Patients often experience an improvement in their quality of life, and symptoms of associated conditions like thyroid dysfunction may also alleviate [15].

Homoeopathic medicines for Vitiligo

Ammi Visnaga: Ammi visnaga is an effective remedy for vitiligo, commonly used to treat white patches on the skin. It's often applied externally over the affected areas. The mother tincture form of Ammi visnaga is frequently utilized for this purpose [14].

Arsenicum Album: Arsenicum album is a homeopathic remedy frequently prescribed for vitiligo patients experiencing anxiety. It's commonly indicated for individuals presenting with milky white spots on dry, rough, and unclean skin. Symptoms often include profound anguish, restlessness, constant movement, and fears of death or being left alone. These patients may also exhibit intense fear accompanied by cold sweats and may feel hopeless about the effectiveness of treatment [14].

Calcarea Carbonica: Calcarea Carb is often prescribed by homeopathic practitioners to address milky white spots on the skin in vitiligo patients. It's a frequently recommended constitutional medicine for individuals experiencing symptoms

such as excessive perspiration on the head, chest, and neck areas. Additionally, patients may exhibit forgetfulness, confusion, and low spirits. Children who benefit from Calcarea Carb may crave eggs and consume dirt and other indigestible substances, and they may be prone to diarrhea. Physically, Calcarea patients are described as fat, fair, and flabby, with a tendency to perspire excessively, feel cold, damp, and sour [14].

3. **Nitricum Acidum:** This homeopathic remedy for vitiligo has profound effects on various bodily systems, including nerves, glands, and the gastrointestinal tract. It targets areas where the skin and mucous membranes intersect, making it effective for conditions affecting these regions. White spots around the mouth, genitals, and mucous openings respond well to this medicine [14].
4. **Psoralea Corylifolia:** Psoralea corylifolia is widely regarded as highly effective in treating vitiligo. Its active constituents, psoralen and isopsoralen, are known for their therapeutic effects on leucoderma both internally and externally. Psoralea is commonly prescribed in mother tincture form along with constitutional medicine for optimal results in vitiligo treatment [14].
5. **Sepia Officinalis:** Sepia is a potent homeopathic remedy capable of resolving vitiligo if the patient's constitutional symptoms align with its indications. However, these constitutional symptoms are often uncommon, with the most prevalent being indifference toward family and life. Individuals requiring Sepia may exhibit aversion toward loved ones, lack of interest in activities, and a tendency to avoid both physical and mental labor. They commonly experience depression, marked irritability, a propensity to weep, a desire for solitude, and a reluctance to seek consolation or sympathy. Additionally, Sepia should be considered for women with menstrual irregularities or those approaching menopausal age, especially if they have a tendency for hot flushes [14].
6. **Silicea Terra:** Silicea is a homeopathic remedy recommended for individuals with waxy and pale skin, particularly those prone to excessive perspiration on their feet and hands. It's also indicated for patients who are susceptible to frequent colds. In cases of vitiligo, Silicea is beneficial for itching primarily during daytime and evening. Individuals who benefit from Silicea may exhibit traits such as yielding, faint-heartedness, anxiety, nervousness, excitability, sensitivity to all impressions, brain fatigue, obstinacy, and fear of pins [14].
7. **Sulphur:** Sulphur stands out as a highly effective homeopathic remedy for vitiligo and related skin conditions, often prescribed by many homeopathic practitioners. It's particularly beneficial for cases of vitiligo arising after local medication. Symptoms associated with Sulphur include pruritus, especially aggravated by warmth, typically worsening in the evening and recurring in springtime or damp weather. Itching and burning sensations are common, exacerbated by scratching and washing [14].
8. **Thuja Occidentalis:** Thuja is known for its efficacy in treating vitiligo, especially in cases where white spots appear after vaccination or injections. It's indicated for individuals with fixed ideas, skin eruptions primarily on covered parts aggravated by scratching, heightened sensitivity to touch, and coldness on one side of the body. Additionally, Thuja users may experience sweetish and strong-smelling perspiration, as well as dry skin with brown spots [14].

CONCLUSION

This article is an attempt to assimilate Vitiligo inclusive of introduction, types, causes, risk factors, signs and symptoms, complications, diagnosis, along with homoeopathic therapeutic which found to be useful and manage Vitiligo cases fortuitously.

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