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A Comprehensive Review of Clinical Features, Management and Homoeopathic Approach in Vitiligo

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Abstract-

Vitiligo, as a problem, is a source of great embarrassment to people. Vitiligo, is a common chronic condition characterized by cutaneous depigmention , in which melanocytes are selectively lost, resulting in non-scaly, chalky-white macules. There is no specific ethnic group, gender, or skin type that is more prone to vitiligo than others, it can affect anyone. This review is aimed to provide a comprehensive knowledge about the current state of vitiligo. vitiligo is typically thought as a cosmetic disorder which effects physical and psychosocial health of sufferers that cannot be ignored.

Keywords- Autoimmune, Hypopigmentation, vitiligo, melanocyte, macule

Introduction-

Vitiligo is a depigmention of skin characterized by a specific melanocyte depletion, resulting in melanin depletion inside the damaged skin regions. A distinguishing feature is a completely amelanotic, non-scaly, chalky-white macule with clear borders [1]. In the Aushooryan era, roughly 2200 B.C., vitiligo was first mentioned in writing under the name Kilăsa. Further, the Egyptian Ebers Papyrus also has information on vitiligo that dates back to 1550 B.C. [2]. It is described as an autoimmune disease characterised by depigmented macules as well as patches appears symmetrically of various shapes on the face, the nape of neck, axillae, elbows, hands, knees and genitals in a localized or generalized pattern, as well as rarely in a dermatome that are driven by the destruction of melanocytes or loss of their functioning in the skin [3]. Histochemically, there is a lack of DOPA-positive melanocytes in the basal layer of epidermis. It is now categorically recognized as an autoimmune disorder associated with metabolism and oxidative stress, including cellular detaching diseases, as well as hereditary and environmental factors. The consequences of vitiligo can be mentally distressing and frequently have a significant impact on daily life, The lesions in some patients may remain static or progress very slowly, whereas, in others, the disease progresses very fast and cover the whole body in few months thus, this should never be dismissed as an esthetic or minor illness [4]. Vitiligo has received very little investigation since most epidemiological studies either focus on highly chosen contexts, such as clinical populations, or on the prevalence of comorbidity in vitiligo patients without discussing the general population(5). Males and females are equally affected; however, few studies have indicated a female predominance, which may be related to women's higher tendency for autoimmune disorders or because women tend to be more concerned with their appearance when seeking advice and treatment[6] Vitiligo typically begins before the age of 30, and most studies show that half of the patients begin to experience symptoms by age 20. When the disease has an early onset in children, it may be related to a family history [**7**]. Segmental and non-segmental vitiligo are both types of vitiligo. While non-segmental vitiligo can appear at any age, young people between the ages of 10 and 30 are the most frequently affected, and about 25% of vitiligo sufferers develop the illness before becoming 10 years old. On the other hand, segmental vitiligo develops earlier than non-segmental vitiligo and can occur in 41.3% of patients before the age of 10 years [**8**]. The disease pathogenesis of vitiligo has not been fully elucidated. Autoimmune, biochemical and oxidative stress, genetic, neuronal and environmental factors are thought to interact and contribute to the development of vitiligo. Diagnosis of vitiligo is straightforward and can be made in primary care but atypical presentations may require expert assessment by a dermatologist. Patients with vitiligo often develop autoimmune thyroid disease or other autoimmune diseases[9]. histopathological findings in vitiligo is associated with the complete loss of epidermal pigmentation (determined by Fontana-Masson stain or dohydrophenylalanine. Immunohistochemistry for melanocyte-specific markers like Melan-A and HMB-45 and specific electron microscopy can also be used).[10] Certain diseases prevent or slow melanin production, causing the epidermis to become hypopigmented. Among these conditions are pityriasis alba, tinea versicolor, oculocutaneous albinism, and nevus depigmentosus. [11]

Epidemiology-

Vitiligo is the commonest cause of depigmentation. It can appear at any age from child to adulthood but peak incidence is reported in the second and third decade. The age of onset usually varies between the sexes. Its prevalence is approximately 0.1% to 2% of people including adults and children worldwide and it affects all races equally.[12]

Pathophisiology-

Vitiligo is commonly known as multifactorial polygenic disorder and has complex pathogenesis, commonly associated with both non-genetic and genetic factors. various theories have been proposed about its pathogenesis but the exact etiology is still unknown. It generally appear by the absence of melanocytes (melanocytes are responsible for producing melanin, the substance that gives pigmentation to the skin) in vitiligo skin with melanocytes loss, owing to their destruction. The destruction results in progressive melanocytes decreases. Theories about the melanocyte destruction include cytotoxic mechanisms, autoimmune mechanisms, intrinsic melanocyte defects, neural mechanisms, and oxidant-antioxidant mechanisms.[13]

Clasification-

According to the American Academy of Dermatology, there are multiple types of vitiligo depending on the appearance of the patches, how much of the body they cover, and how they spread. These types can include:

Localized vitiligo
A doctor may diagnose localized vitiligo if only a few patches cover a small area. These patches may develop in a few places on the body.

Nonsegmental vitiligo
If a person develops patches on both sides of the body, this suggests a type of vitiligo known as nonsegmental vitiligo. Its development is slower than if the patches are in only one body area.
The patches often appear equally on both sides of the body, with some symmetry. In addition, they often appear on the skin commonly exposed to the sun, such as the face, neck, and hands. Some researchers consider the following types of vitiligo as subtypesTrusted Source of nonsegmental vitiligo:
Acrofacial: This occurs mainly on the face, on the scalp, around the genitals, and on the fingers or toes.
Mucosal: This appears mostly around the mucous membranes and lips.
Generalized: In generalized vitiligo, there is no specific area or size of patches. This type causes scattered patches on different areas of the body.
Universal: In this rare type of vitiligo, depigmentation covers most of the body.
Mixed: This type of vitiligo is also rare. It can cause a person to have both segmental and nonsegmental vitiligo.
Rare variants: This includes other rare variations of vitiligo.
Segmental vitiligo
Segmental vitiligo can cause rapidTrusted Source color loss on one side of the body. However, after 6–12 months, it can be more constant, stable, and less erratic than the nonsegmental type. Once it stops, many people with segmental vitiligo do not develop new patches.
It most often appears at a younger age than nonsegmental vitiligo and only affects one body area, such as one leg, one side of the face, or one arm.Segmental vitiligo usually affects areas of skin attached to nerves arising in the dorsal roots of the spine. Conventional vitiligo treatments, such as topical steroids and phototherapy, may not work for this type.[14]

Diagnosis-

Vitiligo can be diagnosed in a variety of ways .The physical presence of developed, amelanotic, non-scaly, chalky-white macules with transparent edges around the mouth, tips of the lower extremity, genitalia, and segment and sites of friction usually yields an distingushing feature of vitiligo . Additional chemical testing is usually not required to establish vitiligo identification. A skin biopsy or additional testing is rarely required other than to rule out other illnesses. Non-invasive methods for determining whether a condition lacks melanocytes include in vivo confocal imaging and a skin sample [15] According to the histopathology of a vitiligo patch's center, the melanin pigmentation has completely disappeared, and no melanocytes are found . Lymphocytes were only seen occasionally . Portable ultraviolet (UV) illumination equipment Wood's lamp, could aid in the diagnosis of vitiligo. [16] It is critical to distinguish vitiligo from melanoma-associated leukoderma and avoid misdiagnosis, Despite having a medically identical

appearance, antibodies targeting the melanoma antigen recognized by T cells 1 (MART1) could distinguish melanoma-associated depigmentation from vitiligo [17]

Assessment of condition-
The majority of diagnostic criteria are based on clinical findings of acquired, clearly defined white lesions on the skin that do not have any associated inflammation and tend to expand centrifugally. On a Wood's light inspection, vitiligo lesions are more noticeable [17], which is a diagnostic procedure used to examine the skin or hair while it is exposed to black light that is generated by the Wood's lamp.

VASI Index and VIDA Score
For the evaluation of disease severity and activation, the vitiligo area severity index (VASI) and vitiligo disease activity score (VIDA) can be used. The proportion of vitiligo involvement is determined in terms of hand units. One hand unit, which includes the palm and the volar surfaces of all the digits, is about equal to 1% of the surface area of the entire body. The product of the area of vitiligo in hand units and the degree of depigmentation within each hand unit-measured patch, yields the VASI for each area of the body. One hundred percent (total depigmentation), 90% of the pigment spots are present, 75% of the area is depigmented, 50% (of the area either pigmented/depigmented), 25% (more pigmented area than unpigmented area), and 10% (a few spots of depigmentation). The VIDA is a six-point scale used to rate the severity of vitiligo. The individual's perception of the current illness activity over time is used to determine the score. Growing lesions as well as the development of new lesions are both symptoms of active vitiligo. An activity of +4 being fewer than six weeks, +3 activity of between six weeks and three months, +2 activity of between three and six months, activity of +1 during 6 to 12 months, 0 indicates stability for at least a year, while −1 indicates stability with spontaneous repigmentation for at least a year [18].

Treatment-
Various types of topical and systemic medications, phototherapy, laser therapy, and surgical therapy are used for the treatment of vitiligo.

Using sunscreen
The lighter patches of skin are especially sensitive to sunlight, and they can burn quickly. A dermatologist can advise on a suitable type of sunscreen.

Phototherapy with UVB light
A treatment option is exposure to certain wavelengths of ultraviolet B (UVB) light, called phototherapy. Home phototherapy units are available but must be used with the supervision of a physician.
If there are white spots across large body areas, UVB phototherapy may help. It involves full-body treatment in an office setting.UVB phototherapy, combined with other treatments, can positively affect vitiligo. However, the result is not predictable, and there is still no treatment to fully re-pigment the skin.

Phototherapy with UVA light
Done in a healthcare setting, UVA treatment involves people taking a drug that increases their skin's sensitivity to UV light. Then, in a series of treatments, a qualified healthcare professional exposes the affected skin to prescribed doses of UVA light.
According to a 2017 meta-analysis, progress is typically evident after 6-12 month of therapy.

Skin camouflage
In cases of mild vitiligo, a person can camouflage the white patches with colored cosmetic creams and makeup. They can select tones that best match their skin tone.

Topical corticosteroids
Corticosteroid ointments are creams containing steroids. A studies concludes that applying topical corticosteroids to the white patches is an effective treatment.
Corticosteroids should be used with caution on the face and only under the guidance of a physician because of potential side effects, such as:
thinning of the skin
spider veins
acne lesions
Calcipotriene (Dovonex)

Calcipotriene is a form of vitamin D used in topical therapy, often in combination with corticosteroids or phototherapy. Side effects may include:
itching
redness
burning
Drugs affecting the immune system
The topical medications tacrolimus and pimecrolimus are drugs known as calcineurin inhibitors. They may help with smaller patches of depigmentation.
However, pimecrolimus contains a boxed warning from the Food and Drug Administration (FDA) about rare cases of malignancy, such as skin cancer and lymphoma, reported in people treated with calcineurin inhibitors.

Skin grafts
In a skin graft, a surgeon carefully removes healthy patches of pigmented skin and uses them to cover affected areas.
This procedure is not very common because it takes time and can result in scarring in the area.
Blister grafting involves producing a blister on more typical skin using suction. The top of the blister is then removed and placed on an area where the pigment was lost.

Tattooing
micropigmetation, or medical tattooing, includes implanting pigment into the skin. It may work in people with light to medium skin tones.
Drawbacks can include difficulty matching the color of skin and the fact that tattoos fade but do not tan. Sometimes, skin damage caused by tattooing can trigger another patch of vitiligo.

Depigmentation
Depigmentation can be an option when the affected area is widespread, covering half of the body or more. It works by reducing the skin color in unaffected parts to match the whiter areas better.
Depigmentation involves applying strong topical lotions or ointments, such as monobenzyl ether of hydroquinone (MBEH), 4-methoxyphenol, and phenol.
The treatment is permanent, but it can make the skin more fragile. In addition, people must avoid extended exposure to the sun. Depigmentation can take 1–4 years depending on the depth of the original skin tone.

Ruxolitinib (Opzelura)
Opzelura is a topical Janus kinase (JAK) inhibitor. It's the only medication approved by the FDA to restore lost pigment in people with vitiligo. It can treat a small area of the body in people 12 years and older with nonsegmental vitiligo.[14]

Diet Vitiligo Treatment:

Fruits: Fruits are rich in antioxidants and essential to improve health. The different fruits that can be added to the diet include oranges, apples, strawberries, melon, and raspberries to prevent cellular damage and limit inflammation.
Vegetables: Adding vegetables such as beets, carrots, asparagus, spinach, cauliflower, broccoli, sprouts, and green beans are helpful for individuals with vitiligo.
Proteins: Eggs, chicken, legumes (peas, lentils and beans), tuna, salmon, etc are excellent sources of proteins that can help improve overall health.
Omega-3 Fatty acids: Foods that are a rich source of omega-3 fatty acids help reduce inflammation and improve artery function. Some examples of omega-3 fatty acid-rich foods to include in the diet are walnuts, flax seeds, nori, canola oil, chia seeds, hemp seeds, salmon, mussels, oysters, kombu, dulse, wakame, etc.

Vitiligo Foods to Avoid:
Various foods promote inflammation in the body. Hence, it is crucial to avoid these foods in the vitiligo diet. Some of the foods that are not to be included in a vitiligo diet include the following,
Processed meats
Sugary beverages such as soda, cola, juices and sports drinks
Pre-packaged food items
Sweets such as candies, cookies, pastries, and ice cream
Foods rich in carbohydrates
Excessive alcohol consumption
Fried food items like chips and fries
Refined foods like pasta, white bread, cakes, white rice, etc

Complications

Vitiligo may not develop into other diseases, but people with the condition are more likely to experience:
painful sunburn
hearing loss
changes to vision and tear production, such as iritis
social stigmatization and mental stress
increased risk of skin cancer

Prognosis

The prognosis depends upon the age of onset and the extent of disease. Early disease onset is usually associated with the involvement of greater body surface area and rate of progression. Few types and certain locations may be responsive to treatment. Refractory cases have been noted in patients presenting with segmental vitiligo and younger than 14 years of age. Most of the patients on treatment usually experience intermittent cycles of pigment loss and disease stabilization.Vitiligo is not fatal. People can also develop secondary conditions, such as inflammation in the ear or eyes.[19]

Conclusions

Vitiligo can affect anyone, regardless of gender, ethnicity, age, or skin colour. It usually first manifests before the third decade, although when it has an early onset in children, it could be related to a family history of the disease. Most vitiligo patients desire to hide their visible lesions by using clothing, camouflage, shade cream bases, and other methods that can help them improve their quality of life and social functioning. Since it results in cosmetic skin problems and is not contagious or threatening the patient's life, the available treatment is sufficient. However, given the long duration of the disease, which could last months or even years, and the psychological problems associated with the condition, a substantial treatment that can help sufferers feel more comfortable and reduce social discrimination and stigmatisation is still needed.

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Homeopathic Medicines for Vitiligo

Homeopathy treatment for vitiligo entails adjusting the medicine to the unique symptoms and traits of each patient. The choice of a homeopathic remedy depends on the physical, emotional, and mental symptoms of the patient as well as their specific constitution. This method acknowledges that every individual with vitiligo has a unique experience and that each person's requirements must be met by personalizing the treatment

Silicea Terra: Best homeopathic remedy for people with sensitive skin that appears waxy and pale. In such patients, the patches or spots are not typically white but slightly rose-colored. There is extensive sweating of the hands and feet. The fingertips also appear cracked with brittle nails.

Arsenic Album: Use this homeopathy medicine for white patches, It is a useful remedy for vitiligo in persons prone to dry, rough skin. The skin complaint coupled with asthma is a strong contender for using homeopathic medicine Arsenic Album.

Calcarea Carb: This homeopathic medicine is used to treat vitiligo where the patches appear milky white in color. There may be a weakness in the bones as well. It is prescribed to free perspiration over the head, neck, and chest and persons with intolerance to cold weather.

Sepia: Effective homeopathic medicine '**Sepia**' is used when people with vitiligo distance themselves from their families and loved ones.

Nitric Acid : This homeopathic remedy is used in the case of the white spots appearing at the mouth, nipples, nose, eyes, penis, vulva (mucous junctions).

Sulphur: Vitiligo treatment in homeopathy is possible using sulphur as it goes deep inside the basic root cause to exterminate the disease. The persons requiring homeopathic medicine Sulphur show a mind constantly occupied with various theories and plans due to which they suffer from mental fatigue and absent-mindedness.

Hydrocotyle Asiatica

Hydrocotyle Asiatica is a homeopathic medicine obtained from a plant named Indian Pennywort. Healthcare professionals use the tincture prepared from the whole fresh plant as a remedy for vitiligo. The medicine stimulates skin pigmentation, returning the natural color of the patient's skin.

Apart from vitiligo, hydrocotyle asiatica can also be used to cure skin issues like acne, leprosy, psoriasis, and more.

Arsenicum sulphuratum flavum- leucoderma is supposed to be favourably influenced by this remedy.

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