Vitiligo

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What is Vitiligo?

Vitiligo is an autoimmune disorder in which patches of white skin appear on various parts of the body. The skin is white because the cells responsible for producing brown pigment (melanocytes) have disappeared from the affected areas. Vitiligo is a common condition afflicting up to 2% of the population and although it may appear at any age, it most commonly commences in childhood or early adult-life.

Vitiligo is an inherited condition but it frequently skips generations so that only 60-80% of patients know of a family member with the condition. How a genetic defect leads to loss of pigment cells in the skin is only poorly understood. It appears that the immune defense system of the body recognizes the pigment cells as "foreign" and not self and proceeds to kill them. The fact that only some pigment cells are killed and not all of them, suggest the defect lies in the cells themselves.

Diagnosis of Vitiligo

Vitiligo can usually be readily diagnosed without any special investigation. Most patients are otherwise healthy and the disorder is limited to the skin. However, many patients have had, or will have, increased or decreased function of the thyroid gland. If any symptoms suggest a thyroid disturbance this can easily be investigated by appropriate blood tests.

The Course of Vitiligo

Once vitiligo has appeared its course is erratic and unpredictable. The only statement which can be made with certainly is that it is very unlikely that vitiligo will entirely go away. Some patients remain stable without any progression for many years, while at the other extreme, some patients show rapid progression over only a few months.

Several studies involving years of observations of large number of patients have attempted to identify markers to allow prediction of the probable course in the individual patient. The only marker identified in this way is that if the vitiligo appears at the sites of trauma to the skin, such as an abrasion or scratchmark, then fairly rapid progression is more likely.

Treatment of Vitiligo

Vitiligo is often brushed aside as being "just a cosmetic problem" with the inference that it does not require or deserve any treatment. This is an unfortunate misconception. The treatment should be tailored individually to the needs of the patients, the extent and location of the vitiligo, and the likely response to the given treatment. The possible approaches are:

1. Sunscreen and Avoidance of the Sun

This is the minimum treatment that must be used by any patient with vitiligo on exposed areas of the body. The reason is simple: the skin in a patch of vitiligo has lost most of its protection against the damaging effects of ultraviolet light in sunlight. A patient with vitiligo should avoid exposing the white areas to sunlight. If exposure is inevitable, as for example with vitiligo on the face and hands,

daily application of a sunscreen SPF 15 or higher is essential from March to November.

2. Masking

Self-tanning lotions can be applied to the skin every few days to camouflage areas of vitiligo. It is most important to remember these lotions do not provide any protection against sunlight. Cosmetics are available to mask small areas of vitiligo on the face. Covermark and Dermablend can be matched to the normal skin color and are very effective. There are also airbrush makeup preparations available that can cover pigment differences.

3. Repigmentation

Treatment with ultraviolet light therapy is the main means of restoring pigment to the white areas of vitiligo. Two types of light therapy are effective in vitiligo. PUVA therapy and narrow-band UVB (311 nm) phototherapy. PUVA therapy consists of taking a medication called psoralen and then being exposed to ultraviolet A (UVA) light. Psoralens are distributed to the skin and there interact with the UVA light to stimulate formation of new pigment cells in the skin. Narrow-band phototherapy does not involve taking a medication and has a similar effect on pigment cells. In some cases, narrow-band UVB can be delivered in a focal manner with an excimer laser.

Narrow-band UVB has been used for other conditions since the 1980s. Presently, narrow-band UVB is generally used as first line phototherapy treatment for vitiligo.

Forms of PUVA therapy have been used in India and the Middle East for several thousand years for treatment of vitiligo and it has been used in America since 1952. Sunlight was used as the source of UVA light initially. Presently, more effective and consistent indoor sources of UVA light have been developed and are used today.

Light therapy produces some repigmentation in almost all patients but the extent of repigmentation does vary. The chief determinant of the response is the location of the vitiligo. Vitiligo on the face almost always responds well to phototherapy whereas the trunk has a less favorable response and so on down to the tips of the fingers/toes and genitals, which almost never respond.

Treatment has to be given two or three times each week. A trial of thirty consistent treatments gives a fairly accurate indication of whether or not treatment will be worthwhile. If there is no response by treatment number thirty, it is unlikely continued treatment with phototherapy will yield benefit. Treatment number fifty is the next milestone in that if the response is not sustained, it is unlikely that further repigmentation will occur. Continuation of treatment is only worthwhile if a sustained improvement is occurring.

Phototherapy does not stop new areas of vitiligo appearing and repigmented areas can lose pigment again. However, it is unusual for a patient to continue to show progression of vitiligo after 20-30 treatments if they are responding in other areas. Furthermore, if a given patch of vitiligo is completely repigmented and filled in, it is unusual to again lose

the pigment. When a patch of vitiligo has partial repigmentation, the repigmentation can be lost.

The most recent light treatment for vitiligo involves use of an excimer laser which delivers narrowband UVB to focal areas. This is best for small areas of vitiligo and unfortunately, some insurance carriers do not cover treatment with excimer laser for vitiligo.

Note that other sources of ultraviolet light such as sunlight and tanning parlors rarely produce pigmentation in vitiligo.

4. Topical Therapy

Corticosteroid creams act to decrease the inflammatory "attack" on the melanocytes. These preparations useful in patients with smaller areas involved but unfortunately, when used on large areas they are less effective and prone to give rise to adverse effects. The principal harmful effects include atrophy or thinning of the skin (stretch marks); suppression of the normal function of the adrenal glands; and skin fragility and/or skin discoloration. There are also non steroid topical therapies including the immune modulators Protopic (tacrolimus), Elidel (pimecrolimus) and Opzelura (ruxolitinib). These decrease inflammation in the skin without the long term side effects of topical steroids.

5. Skin Grafting

This is a technique used to supplement the effect of light therapy in returning pigment to the skin. The melanocytes are in the most superficial, outer layer of the skin. They are harvested and transferred/grafted to white areas of vitiligo. Two or three weeks after grafting, light therapy is resumed and the grafts typically expand to help fill in the white areas. Unfortunately, this therapy is not widely available at present.

6. Depigmentation

A few patients have such extensive vitiligo that consideration can be given to attempting removal of the remaining pigment so the skin is all one color. Usually this is not worth considering unless the vitiligo covers at least 90% of the body. The agent used to remove pigment is applied as a cream and since it is slow-acting, treatment is necessary daily for 6-12 months. The main problem with this treatment is that the cream can trigger an allergic reaction in the form of eczema and this usually means the treatment has to be suspended. Also, strict sun protection is required for all depigmented skin.

7. Systemic Therapy

At present, there are new systemic therapies in development for vitiligo. These agents work either through immune suppression and/or immune alteration. They are not yet FDA approved, but vitiligo is an area of active research interest across the globe.