Eczema and Dermatitis

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What is Eczema?

Eczema is a very common condition which in some form, at some time, afflicts more than half the population. Eczema is an inflammation of the skin which can have many causes, but regardless of the cause, the changes that occur in the skin are very similar.

The terms eczema and dermatitis are often used interchangeably. Acute eczema refers to rapidly evolving red itchy rash that can be swollen and may blister, such as poison ivy, and typically lasts for a limited time. Chronic eczema refers to a longstanding dry, scaly, itchy, inflamed area. The skin is often thickened and may be discolored relative to the surrounding skin. Atopic dermatitis is an example of a chronic form of eczema.

There has been much investigation of the mechanism and causes of eczema but unfortunately it remains a poorly understood disorder. We know there are several different causes of eczema, several of which are inherited, but how some abnormality of a gene is translated into the skin changes we see is not fully known.

Different types of Eczema

Atopic Dermatitis / Eczema

- An inherited condition which is associated with a personal and/or family history of hay fever and asthma. Some patients only have atopic eczema while others have two or three of these conditions. Atopic eczema can begin at any age but the commonest time of onset is in childhood. The course of the condition is very unpredictable with frequent remissions and relapses.

Hand and Foot Eczema

- For many individuals, hand and foot eczema is the most disabling form of eczema because it impedes the function hands and feet in daily life. Three factors interact in causing hand eczema but the importance of each one varies between individuals.
    - First, a genetic or inherited tenancy to develop hand and foot eczema probably underlies all cases. A family history can be obtained in about 80% of patients.
    - Second, contact with chemical irritants appears to be the trigger for developing eczema in many patients and is an aggravating factor in all patients.
    - Third, emotional stress is the dominant cause of hand and foot eczema in some, and certainly plays a contributing role in nearly every patient's symptoms.

Winter Eczema

- Winter eczema typically only occurs in the winter season and is confined to people with a tendency for dry skin. A dry atmosphere, plus frequent, long, hot showers with liberal use of soap are often trigger factors in this condition. Winter eczema is generally more common and more severe as we age and in some older people, may persists year round. The skin develops mild flaking with itch, then redness, cracking and scaling appear. The commonest site for winter eczema is the lower extremities but any area can be affected.

Contact Eczema, both Allergic and Irritant

- The name of this condition explains its cause: it is due to contact with a chemical to which one either allergic or serves as an irritant. The commonest example of allergic contact

dermatitis is poison ivy. Irritant contact dermatitis results from handling detergents, solvents or other chemicals. The site of eczema is determined by what portion of the body comes into contact with the offending chemical since only skin that has had direct contact will be affected.

Seborrheic Dermatitis / Eczema

- Dandruff is the mildest form of seborrheic dermatitis. Seborrheic dermatitis is closely related to psoriasis and both conditions may be found in one family or even in the same individual. It can spread from the scalp to the face, chest and other parts of the body. Evidence has accumulated that a yeast-like organism (malassezia), which is a normal resident on the skin, is closely involved in seborrheic dermatitis.

Neurodermatitis

- This is a term used rather loosely to refer to several types of eczema. Chronic neurodermatitis, such as lichen simplex chronicus, usually consists of a single patch of eczema with marked thickening of the skin. Common locations include the scalp, the nape of the neck, the back of a leg or the outer aspect of an arm. Another form of neurodermatitis often called prurigo nodularis consists of itchy skin nodules, which can be scattered over all parts of the body.
- The hallmark of neurodermatitis is intense itching and the consequent scratching of the skin. The scratching results in the thickening of the skin and/or the formation of nodules. The name neurodermatitis implies that nerves have something to do with this condition, but there is no evidence that emotional/nervous stress has anything to do with the cause of this type of eczema.

The Diagnosis of Eczema

Eczema can usually be readily diagnosed from the history plus examination of the skin. Microscopic examination of a small biopsy of the skin can be used to provide confirmation of the diagnosis in the few cases where doubt exists. If allergic contact eczema is diagnosed, patch tests are often required to detect what chemical is causing the allergy, unless its identity is apparent from the history.

Treatment of Eczema

There are multiple aspects in the treatment of eczema: removing identifiable causes; removing aggravating factors and controlling symptoms; and suppressive treatment aimed at suppressing the inflammation that is occurring in the skin. Several measures can be very helpful in reducing the symptoms and severity of eczema:

- Moisturizers - The skin of patients with chronic eczema is usually very dry. Dry skin tends to be itchy and this symptom can be reduced by frequent application of moisturizers. The best time to apply a moisturizer is immediately after a bath or shower since the amount of water in the skin is maximal at that time and the moisturizer will help to lock-in this water and prevent its evaporation. The choice of a moisturizer is individual, some prefer an ointment, some a cream and some a lotion. We have samples of different moisturizers and will be pleased to let you try some.

- Antipruritics - Itch, or pruritus as it is called, is a major symptom in all people with eczema. There are many drugs listed as being antipruritic, and most are moderately successful in decreasing itch. Almost all antipruritics are antihistamines. These agents, however, have two problem side-effects: drowsiness and enhancement of the effects of alcohol. When trying a new antipruritic, you should first take it at home in the evening to test whether it makes you drowsy. Always be cautious of mixing anti-histamines and alcohol and never mix antihistamines, alcohol and driving; the combination may be lethal.

- Antibiotics - Infection is often super-imposed on eczema and frequently elimination of infection can greatly reduce the severity of eczema. Antibiotics may be required to combat infection. Likewise, bleach baths are helpful in many cases of chronic eczema.

- Reduction of Irritants: There are a number of irritant factors in our environment which can worsen eczema involving the hands but also apply to all patients with eczema to a greater or lesser degree. Gloves are important when working with detergents and/or chemicals. Use long-handled brushes for cleaning and scouring dishes, pots and pans. Avoid exposure of your bare hands to hair lotions, dyes, rinses and shampoos. Wash your hands as little as possible. When cleaning hands is necessary, wash with lukewarm water, use as little soap as possible, rinse thoroughly then pat dry. Moisturize your hands immediately after washing and drying them while still a bit damp.

Suppressive Treatments for Eczema

Anti-inflammatory treatments are the main approach for treating eczema. Unfortunately at this time, there is not a cure for eczema. Anti-inflammatory treatments will only be effective as long as they are used. There are three effective anti-inflammatory therapeutic approaches and they can be used alone or in combination.

Steroid Therapies

- Cortisone and cortisol are naturally occurring steroid hormones produced by the adrenal glands which have, as one of their effects, the property of reducing inflammation. Dozens of derivatives of cortisone have now been produced as medications. In the treatment of eczema, these compounds are usually applied to the skin as lotions, creams or ointments. When used as directed, these preparations are safe and effective treatments but it must be remembered that these are potent agents and misuse can result in very undesirable side-effects. Thinning of the skin with formation of stretch-marks and broken blood vessels are two common problems from over-use of cortisone steroid medication.
- In the form of prednisone, steroids are sometimes taken by mouth for the treatment of eczema. In short courses, as for the treatment of poison ivy dermatitis, this is a very effective and safe treatment. However, long-term use of oral steroids in the treatment of chronic eczema is associated with two inevitable problems. First, the effectiveness of the drug diminishes so that more and more is required to produce the same effect. Second, oral steroids will eventually cause side-effects such as weakening of bones, increased blood sugar, increased blood pressure, cataracts and potential to develop serious infections. Thus, prednisone is not a safe or effective long-term treatment for eczema.

Immune Modulators

- Several agents work in eczema by altering and/or suppressing immune function. Oral agents used include CellCept (mycophenolate), Methotrexate, Imuran (azathioprine) and Cyclosporine. These require laboratory monitoring and have potential systemic side effects over the long term. Topical immune modulators include Protopic (tacrolimus), Elidel (pimecrolimus), Opzelura (ruxolitinib) and Anzupgo (delgocitinib). Other topical include Zoryve (roflumilast) and VTAMA (tapinarof). These agents are effective in eczema, more so as maintenance medications than for acute flares.
- Biologic medications, including Dupixent (dupilumab), Ebglyss (lebrikizmab) and Adbry (tralokinumab), have been developed which affect immune system pathways involved in inflammation and itch.
- Several oral agents in the class of medications called the JAK inhibitors have been approved for atopic dermatitis. They act via immune suppression and/or immune alteration and include Rinvoq (upadacitinib) and Cibinqo (abrocitinib). They require laboratory monitoring and have potential systemic side effects over the long term.

Ultraviolet Light

- Phototherapy has been used for the treatment of chronic eczema for over 40 years. The entire body is treated and treatments are given two or three times a week. 20 – 30 treatments are required to clear eczema. Maintenance treatment follows, typically weekly, for a few months. Some patients choose to continue with maintenance therapy while other discontinue phototherapy. Disease may flare or recur however as phototherapy, like all therapies, suppress the inflammation of eczema but are not a cure.
- Phototherapy has several advantages over topical cortisone steroid ointments and creams. First, a successful response to therapy results in a return of the skin to a normal appearance with decreased or clear symptoms whereas cortisone treatment only produces a partial suppression of the eczema. Second, once cleared, infrequent weekly treatment is usually sufficient to maintain a clear state whereas cortisone treatment usually has to be used daily.
- There are two forms of phototherapy primarily used for eczema presently – narrowband UVB and PUVA (psoralen plus UVA light). Most types of eczema respond to narrowband UVB and/or PUVA. Phototherapy can be used with nearly all of the other above therapies.

Unproven Treatments for Eczema

Desensitization

- Desensitization to allergens has been tried in atopic eczema in the belief that allergy to various materials in the environment are the cause of the condition. While it is true that people with atopic eczema often give positive responses to pollens, grasses, dander and other common allergens when tested by allergy prick testing, desensitization to these substances has not been shown to improve eczema.

Exclusion Diet

- Exclusion diets have also been tried in atopic eczema in the belief that food allergy is the basic cause. Careful studies have shown these diets are of little value in atopic eczema.