

Dermatitis; Types, Causes, Symptoms and Management: A Review

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ABSTRACT

The term dermatitis generally described a group of common conditions that present an itchy inflammation of the skin. However, the term eczema is often used interchangeable with the word dermatitis, but theoretically eczema refers to atopic eczema. Dermatitis forms from a complex interplay of environmental, immune and genetic factors. Some of the other commonest factor that facilitates dermatitis is the family history of dermatitis which can increase the likelihood of an individual developing the condition. Certain genetic variations may predispose the skin to react excessively to environmental triggers. Dermatitis manifests in different forms, each with its own distinct characteristics and triggers. Some common types of dermatitis include atopic, contact, Seborrheic and Nummular dermatitis. The paper was aimed to review the types, causes, symptoms and Management of dermatitis.

Keywords: Allergy, Dermatitis, Eczema, Skin

INTRODUCTION

Dermatitis, often referred to as eczema is a common condition of skin that affects millions of people worldwide. It is characterized by inflammation of the skin, leading to redness, itching, and discomfort. Dermatitis can manifest in different forms and degree of severity and its impact on quality of life can be significant. Dermatitis forms from a complex interplay of environmental, immune and genetic factors. Some of the other commonest factor that facilitates dermatitis is the family history of dermatitis which can increase the likelihood of an individual developing the condition. Certain genetic variations may predispose the skin to react excessively to environmental triggers [1].

Allergens, such as pollen, pet dander, and certain foods,

can trigger allergic reactions that manifest as dermatitis. Contact with these allergens can lead to skin inflammation and discomfort. Exposure to irritants like detergents, harsh soaps, cleaning products, and chemicals can disrupt the skin's protective barrier, causing inflammation and leading to dermatitis. Changes in temperature, humidity, and air quality can influence the onset and severity of dermatitis. Cold and dry climates, for instance, can contribute to skin dryness and irritation. Emotional stress can exacerbate dermatitis symptoms. Stress triggers the release of certain hormones that can compromise the skin's barrier function and trigger inflammation [2].

TYPES OF DERMATITIS

Dermatitis manifests in different forms, each with its own distinct characteristics and triggers. Some common types of dermatitis include:

Atopic Dermatitis: Also known as eczema, atopic dermatitis is often linked to a family history of allergies and asthma. It typically begins in infancy or childhood, presenting as red, itchy rashes on the face, scalp, and joints. Scratching the affected areas can lead to further inflammation and infection [3].

Atopic dermatitis is common, relapsing, chronic, inflammatory skin disease that primarily affects younger children. Generally, atopy is defined as the inherited tendency to produce immunoglobulin E i.e. IgE antibody in response to certain environmental proteins such as house dust mites, pollens, and food allergens. Etymologically, the word dermatitis derived from two Greek words; "derma" means skin while "itis" means for inflammation. Allergic sensitization and high level of immunoglobulin E are present in only 50% of the total patients with the disease, and therefore, atopic dermatitis is not a definite term [4]

Contact Dermatitis: This type of dermatitis results from direct contact with irritants or allergens. It can be classified into two subtypes: irritant contact dermatitis (caused by exposure to harsh substances) and allergic contact dermatitis (triggered by an immune response to allergens like nickel, fragrances, or latex) [5].

Irritant contact dermatitis: This type of dermatitis developed when the skin is in contact with irritating substances such as solvents and detergents. These substances strip the skin

surface of its natural oil. Therefore, this type of dermatitis developed when there is regular or prolonged contact with such kind of irritating substances. It was noted that the most important factors in causing irritant contact dermatitis are the amount and concentration of the irritating substances coming across the skin. This types of dermatitis is very common in people who have their hand in water at several occasion such as hairdressers, nurses, cleaners, bartenders and cooks. Anyone can develop irritant contact hand dermatitis with frequent hand washing or from handling various irritating substances [6].

Allergic contact dermatitis: occurs when allergy develops to a specific chemical or substance that has been in contact with the skin. Examples of these substances include metals such as nickel, rubber, chemicals in hair dye and perfumes or preservatives in creams and cosmetics. It is not known why some people develop allergy to these substances while others do not. In some cases, some less common substances in vegetables and fruits can result to immediate allergic reaction when touched. This leads to itchy skin swellings known as *contact urticaria* (hives). This can lead to a flare of pre-existing dermatitis (eczema) [6].

Seborrheic dermatitis: this type of dermatitis primarily affects areas that were rich in sebaceous glands such as face, chest and scalp. It is characterized by red, scaly patches that may be accompanied by itching. This condition is often associated with an overgrowth of yeast on the skin [3].

Nummular dermatitis is characterized by coin-shaped patches of inflamed skin. These patches can be intensely itchy and often occur on the arms, legs, and torso. Dry skin and environmental factors can trigger or exacerbate this condition [3].

CAUSES OF DERMATITIS

For better understanding of eczema and its causes, it is good to understand the differences between healthy skin and those skins affected by the eczema. Skin is made up of a thin, protective outer layer (the stratum corneum), a small layer containing skin cells (the epidermis), a middle layer (the dermis), and a fatty layer at the deepest level (the adipose tissue). Each layer of the skin contains fat, skin cell and water all of which help to protect and maintain the condition of the skin [7].

In healthy skin, cells are plumped with water forming a

protective barrier against infection and damage. Fats and oils in the skin help body to maintain temperature; prevent harmful substance or bacteria from entering body and allowing skin to retain moisture. The outer skin cells are like bricks, while fats and oils in the skin are like the mortar that keeps everything together acting as a seal. This implies that the skin cells attract and keep water inside and the fats and oil help to maintain the water in [8]

In eczema, there are genetic reasons for the skin being so dry in many people. Several researchers have identified genetic mutations leading to a number of changes in the skin's structure: first, the eczematous skin does not as much fat and oil as normal skin and there is a lack of natural moisturizing factors; second, there is often a deficiency of filaggrin, a structural protein which acts to tie skin cells together in the top layer of skin (the stratum corneum) – filaggrin deficiency has been found in 56% of people with moderate to severe eczema and in 15% of those with mild eczema; third, some skin cells (corneocytes) have an irregular shape. Together, these structural differences result in gaps opening up between the skin cells and an altered skin barrier, which then offers insufficient protection, allowing entry to bacteria, irritants and allergies and facilitating increased transepidermal water loss [8].

Some everyday substances contribute to further breaking down the skin. Soap, bubble bath and washing-up liquid, for example, have a high pH and will remove oil from anyone's skin. In people with eczema the skin is especially prone to drying out and will break down more easily than normal skin. This means it can quickly become cracked and inflamed on contact with substances that are known to irritate or cause an allergic reaction. If the skin is not moisturized, it can become flaky, itchy and sore. This is often most noticeable on exposed parts of the body, such as the face, hands and lower legs. It can be particularly problematic during the winter months as the skin becomes drier due to environmental triggers such as central heating, lack of humidity, wind and cold, and moving between different temperatures [9].

AETIOLOGY OF DERMATITIS

Atopic eczema is genetically considered but may be facilitated chemicals by exposure to common irritants and by scratching. Asteatotic eczema usually occurs on the shins of the elderly where the protective functions are compromised and excess drying occurs. Seborrhoeic dermatitis is caused by infection of

the skin with the yeast *Malassezia furfur*. In stasis dermatitis, there have been probably a number of different contributing causes. However, the basic cause is always related to excessive hydrostatic pressure in the venous system in the skin. The variants depend on local anatomical and physiological factors. In irritant contact dermatitis, the most common irritants are solvents and detergents [10].

Dermatitis occurs mostly in people who engaged in washing and drying their hands regularly e.g. hairdressers, health care workers, catering staff. The stratum corneum of the skin normally acts to prevent external agents entering the skin and water escaping from it. The protective ability of stratum corneum can be interfered by any factor that damaged it. Alkaline soaps, organic solvents and chemicals are particularly powerful in this respect. Allergic contact dermatitis can be caused by exposure to many different agents. It is manifestation of a delayed hypersensitivity reaction occurring on the skin of a previously sensitized individual. Photo-allergic contact dermatitis occurs as a result of exposure to photosensitizers, but the exact mechanisms are not well understood. Id reactions occur in association with an acute inflammatory process, often a fungal infection, at a distant site, and may be allergic reactions to fungal or other antigens created or released by the inflammatory process [11].

MANAGEMENT OF DERMATITIS

It is noted that dermatitis may not always have a definite cure. However, effective management of the skin can help in controlling symptoms and improving the quality of life of the individual affected by the condition. Here are some approaches to consider Moisturizers and emollients are essential for maintaining skin hydration and strengthening the skin barrier. Topical corticosteroids are commonly prescribed to reduce inflammation and itching during flare-ups [12].

In management of dermatitis, identifying and avoiding triggers that worsen dermatitis is very vital. This may involve using hypoallergenic products, avoiding known irritants, and making changes in one's environment to minimize exposure to allergens. Practicing good skin hygiene, using mild cleansers, taking lukewarm baths, and wearing breathable clothing can help manage dermatitis symptoms. In cases of severe dermatitis, oral corticosteroids or immunosuppressive medications may be prescribed by a dermatologist to control inflammation and provide relief. Light therapy, or phototherapy, involves controlled exposure to ultraviolet

light under medical supervision. This can help manage symptoms by reducing inflammation and slowing down skin cell growth. Since stress can exacerbate dermatitis, adopting stress-reduction techniques such as meditation, yoga, and mindfulness can have a positive impact on symptom management [13].

CONCLUSION

Dermatitis, often referred to as eczema is a common condition of skin that affects millions of people worldwide. It is characterized by inflammation of the skin, leading to redness, itching, and discomfort. There are several types of dermatitis ranging from atopic, contact, Seborrheic and Nummular dermatitis. Dermatitis is caused by many factors including exposure to irritant chemicals and by scratching, excess drying occurs, infection of the skin with the yeast *Malassezia furfur*, excess hydrostatic pressure in the venous system. It is recommended that consultation with a dermatologist is essential for accurate diagnosis, and treatment plans toward healthier skin.

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