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A "Review on Different Types of Skin Allergies and Treatments"

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ABSTRACT

Individuals of all ages are getting affected by skin allergies, and so different skin allergies have become a universal problem irrespective of age, sex, time, weather conditions, etc. So, each skin allergy demands trigger identification, proper skincare, and timely medical intervention. The article provides an overview of existing studies on skin allergies and treatment and proposes future research on skin allergies and plant-based treatment for public health practices.

Keywords: Allergies, Skin Diseases, Atopic, Dermatitis, Medicinal Plants

INTRODUCTION

The skin, our largest organ, is crucial for physiological functions and mental health. However, allergic skin diseases, affecting a significant portion of the population, significantly impair skin integrity. Skin allergies are complex immune systems that can be easily observed and biopsied. These allergies can start in early life, develop in middle life, or develop in senescence. Some are inherited, while others are acquired through genetic alterations. Many are long-persisting and can significantly impact quality of life. Topical treatment has been used for many skin allergies, but recent advancements in therapeutic armamentarium and biologic and small molecule drugs are also in use. [1]

Skin inflammations and irritations have become common nowadays. Some of the common skin-related issues are bacterial skin diseases, nappy rash and cradle cap, eczema, wounds, abscesses, frostbite, insect bites, cuts, grazes, burns, minor wounds, bruises, abrasions, and inflammatory skin disorders. Each of the skin allergies has its own discomfort. No one can ignore insect bites because severe allergic reactions, such as swelling, redness, pain, skin eruption, and blisters, can happen. Treatment is necessary, or else it leads to fatal incidents, and it should not be ignored during travel either. Traveling through endemic countries can lead to fatal incidents if not treated. Using a non-drowsy antihistamine such as loratadine can treat itching and redness from insect bites, but it is not free from side effects. So topical application of such a non-drowsy antihistaminic is recommended. [2]

Allergies cause skin problems due to the presence of a high density of dendritic cells and transient immune cells such as lymphocytes, mast cells, eosinophils, neutrophils, and basophils. The field of skin allergy as well as the treatment created interest and also huge challenges. To meet the challenges in the field of skin allergies, new treatments are being introduced to turn them into opportunities. The pandemic gained the top position to impact medical practices for treating atopic dermatitis or chronic spontaneous urticaria. Allergic reactions are a hypersensitivity disorder triggered by an allergen, requiring testing and identification of the underlying allergen trigger for diagnosis and treatment. A study suggests that detailed, high-magnification inspection during the verification stage of multiple head skin prick test (SPT) devices could improve clinical accuracy and performance to avoid misinterpretations by testing physicians and potentially ineffective allergy treatment. [3]

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The European Academy of Allergy and Clinical Immunology (EAACI) supports journals such as Allergy, Pediatric Allergy and Immunology, and Clinical and Translational Allergy on atopic dermatitis and urticaria with the aim to promote health promotion and to provide knowledge of health. [4]

An allergy is an immune-mediated hypersensitivity reaction to harmless environmental allergens, resulting from complex gene-environment interactions. Atopic diseases, such as dermatitis, allergic rhinitis, and asthma, are caused by an inherited propensity to produce IgE antibodies against common allergens. [5]

The primary database of the top 20 countries of the Web of Science (WOS), that was accessed on August 23, 2021, has proved that allergies have affected millions of people, and so it is considered a universal problem. Genetic and epigenetic factors influence atopic dermatitis, a chronic inflammatory skin disease, resulting in a spectrum of endophenotypes. Topical therapy has proved to be a good choice for atopic dermatitis in managing symptoms. For severe cases, systemic therapy is preferable. [6]

Allergies are a global health concern, with 50% sensitization rates in school-going children worldwide, affecting 11.8 million children in the US, and potentially leading to anaphylaxis. [7]

Skin allergies are chronic inflammatory conditions mediated by immediate or cytotoxic hypersensitivity reactions. [8]

A remarkable portion of the population of people has inherited skin conditions. Many skin allergies are long-persisting and impact quality of life. Topical treatment has been used for many skin allergies. Skin allergies can be the result of repeated use of chemicals such as personal hygiene products, household products, and work environments. [9] .

Allergic reactions leading to skin reactions like "dry," "sensitive," or "fragile" are common in developing countries. Skin moisturizers play a crucial role in maintaining the skin barrier and a well-balanced microbiome. [10]

Allergic diseases can be classified into two categories: atopic and non-atopic, based on the underlying immunology. Atopic diseases, such as dermatitis, rhinitis, and asthma, are caused by complex gene-environment interactions. [11]

The World Health Organization has listed three systemic disorders; among these, allergic diseases caused by an impaired immune system stand in top place, and the World Health Organization suggested preventing and controlling them in the 21st century. According to the condition of the allergic diseases, the treatment varies. It is reported that 68.6% of individuals with allergies experience skin reactions, including acne, contact eczema, atopic dermatitis, rosacea, psoriasis, vitiligo, and seborrheic dermatitis, and these are associated with itching, burning, and pain. [12]

Some medicinal plants are characterized by anti-inflammatory properties and bactericidal and fungicidal activity and can be complementary to synthetic drugs, such as Matricaria recutita L., Calendula officinalis L., Hamamelis virginiana L., etc. The above medicinal plants contain flavonoids and triterpene derivatives, with triterpene saponins as active ingredients, aliphatic hydrocarbons, monoterpenes, sesquiterpenes, aliphatic aldehydes, and alcohols, with tannins showing anti-inflammatory properties. Aloe vera contains carbohydrates, glycoproteins, sterols, and enzymes, while marshmallow root contains mucilage polysaccharides. Oat fruit contains mucilage polysaccharides, proteins, and flavonoids with anti-inflammatory activity. People use Avenae fructus to treat minor skin inflammations and wounds. Purple coneflower and Symphyti radix (comfrey root) contain alkamides and caffeic acid derivatives, while Millefolii herba contains essential oil and astringent properties. [13].

How The Plant-Based Treatment Is Superior Over Other Treatment:

Subcutaneous allergen immunotherapy, which uses skin's immunocompetence, has gained attention for treating peanut allergies. However, the stratum corneum barrier can impede allergen delivery, leading to allergic inflammation. A desirable approach balances skin disruption and allergen delivery, aiming for high efficiency

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across skin types and optimizing variables like safety profile, dosage, treatment frequency, application time, and patient compliance. Quantitative quantification is crucial for dose optimization and treatment response consistency. [14]

Allergies are complex, endemic diseases affecting quality of life. Type 2 immune responses drive these diseases, with three strategies: prevention, symptomatic, and causative therapy. This review article focuses on efficient symptomatic treatments using specific antibodies. Recent developments in allergic asthma, chronic spontaneous urticaria, and atopic eczema show biologics like dupilumab and omalizumab becoming reliable therapeutic options.

Scope Of Medicinal Plants:

Medicinal plants are in widespread use in diagnosing, treating, maintaining, and preventing diseases. Different herbs possess different chemical compositions in various forms, and the World Health Organization has set some guidelines for the efficient use of extracts of medicinal plants. [15]

S. auriculata, B. asiatica, D. metal, and A. marmelos are the widely employed herbs in treating tuberculosis, cancer, diabetes, heart diseases, etc. While the leaves and flowers of plants are the main source of phytochemicals, the fruits, seeds, stem, root, and rhizome are ancillary sources. [16]

At present there is a shift from modern medicine to herbal plants in the treatment of diseases, as they are safe and efficient. [17]

Medicinal herbs possess anti-inflammatory properties. The use of such medicinal herbs helps in reducing inflammation by blocking the inflammatory process, arachidonic acid metabolism, enzymes, and inflammatory cells. [18]

CONCLUSION

Skin is the largest organ of human beings. As the skin is the ultimate part of the human, there are higher chances of getting infections, insect bites, abrasions, allergies, etc. Skin allergies may not be life-threatening, but they affect mental and social comfort. The use of herbs and plants was known for centuries for treating skin allergies. The study focused on a general synthesis of the available existing studies on the skin allergies and the treatment with the plant-based medicines and the overall uses of medicinal plants in the medicinal field. It can be a collective discussion of some of the skin allergies, plants used to treat them, and other disorders.

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