Asian Journal of Pharmaceutical Education and Research
Vol -13, Issue-3, July- September 2024
ISSN:2278 7496

REVIEW ARTICLE Impact Factor: 7.014

RECENT ADVANCEMENT IN THE TREATMENT OF URTICARIA: REVIEW

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Received 12 June. 2024; Revised 15 June. 2024; Accepted 21 June. 2024, Available online 10 July. 2024

Cite this article as: Mustapha A, Gada MA, Shettima AK and Tiwari SP. Recent advancement in the treatment of urticaria: review. Asian Journal of Pharmaceutical Education and Research. 2024; 13(3): 12-20.

https://dx.doi.org/10.38164/AJPER/13.3.2024.12-20

ABSTRACT

Urticaria commonly known as hives, is a skin allergy condition which is characterized by itching, raised welts or rash. Over the years, research and medical innovation have led to significant Advancements in the treatment of urticaria, offering hope and relief to millions of individuals worldwide. There are many recent advancements in the treatment of different classification of Acute and Chronic urticaria. This abstract provides an overview of recent development or Advancement in urticaria treatment. Firstly, to proceed into the understanding of urticaria's underlying causes, emphasizing the difference between acute and chronic forms of condition. The most exciting way in recent Advance treatment of urticaria is the Advantage of monoclonal antibodies, such as Omalizumab and Dupilumab which target specific pathways in histamine release and inflammation. These biological drugs have shown remarkable efficacy, particularly in the severe cases of urticaria. Additionally, recent research has unveiled an autoimmune component in chronic urticaria treatment, leading to advancements in immune- modulatory therapies tailored to treat the aspect of the condition. Furthermore, short-term use of systemic corticosteroids has become a viable option for treatment of acute urticaria, minimizing potential long term side effects. In addition, 80% of the cases with no exogenous allergy trigger on underlying systemic disease are identified, and the condition is referred to as chronic idiopathic urticaria. In addition to medical interventions, lifestyle management plays a critical role in urticaria treatment. Patients are advised to identify and avoid triggers, with of the outbreaks. In conclusion, the recent advancements in the treatment of urticaria offer renewed hope and improved outcomes for individuals affected by this condition. The approaches, introduction of biologics and enhanced antihistamines, the landscape of urticaria management indeed, provide patients seeking relief from the challenges of skin disorder.

Keywords: Urticaria, Diagnosis, Treatment, Corticosteroids.

INTRODUCTION

Recent strides in urticaria treatment delve into cutting edge therapeutic modalities, heralding a transformative era in managing this often perplexing condition. Biologics exemplified by omalizumab, have emerged as instrumental agents. By selectively targeting immune pathways those biologics offer a

nuanced and targeted intervention, showcasing a departure from conventional approaches. A notable addition to the armenentarium is the advert of janus kinase (JAK) inhibitors[1]. Among them, upandacitinib stands out, demonstrating considerable efficacy in the indicate landscape of chronic spontaneous urticaria. Those inhibitors operate at the molecular level, modulating inflammatory signals with precision. These recent breakthroughs not only expand the repertoire of therapeutic options for urticarial. But also signify a paradigm shift towards personalized and sophisticated interventions, providing renewed hoped for individuals navigating the challenges posed by this dermatological condition. Urticaria commonly known as hives, is a skin infection characterized by itching, raised welts or rashes. Recent advancements have improved treatment options for urticaria, offering relief to many infected. Urticaria is a skin condition that affects millions of peoples worldwide [2]. It is characterized by the sudden appearance of itching, raised welts on the skin, often triggered by various factors such as allergies, infections or stress. Fortunately, recent advancements in medical research and treatment have significantly improved our ability to manage and alleviate the symptom of urticarial [3].

CLASSIFICATIONS OF URTICARIA

The urticaria is caused by histamine release leading to skin inflammation. There are two main classification:

Acute urticaria (lasting less than six weeks) is a transient skin condition characterized by the sudden onset of hives or welts on the skin. Here is a more detailed explanation:

Duration: acute urticaria is short- lived, typically lasting for a few hours to six weeks. In many cases, it resolves within few days.

Symptoms: consist of difference symptoms like hives (wheals), itching and swelling.

i. Hive (wheals): raised, itching and often red welts. Appear on the surface of the skin.
ii. They can vary in size and shape.
iii. Itching: intense itching is a common symptom associated with the hives.
iv. Swelling: the affected areas may swell due to fluid accumulation.

Chronic urticaria (lasting greater than six weeks) is characterized by the prolong and recurring presence of hives or welts on the skin, lasting for more than six weeks here is a closer look at chronic urticarial and its symptoms:

Duration: persist for an extended period, often for months or even years. Symptoms: consist of difference symptom like hives and angioedema.

i. Hives (wheals): raised, itching welts on the skin, similar to those seen in acute urticarial.
ii. Angioedema: swelling in deeper layer of the skin, especially around the eyes and lips. It can also involve the throat and cause difficulty breathing in severe cases.

The effective treatment of urticaria, it is essential to understand its underlying causes. The primary triggered by the release of histamine, a chemical in the body that causes blood vessels to leak and skin as well. In acute urticaria condition less than six weeks in the body. While chronic the condition persists for more than six weeks. Those distinctions help with treatment decisions.

CAUSES OF URTICARIA

Urticaria also known as (Hives) affects about 20% of the people at sometime during their lives. It can be triggered by many substances or situations and usually starts as an itching, pitch of the skin that turns into swollen red welts[4]. All we can describe as allergies or skin allergies. Some causes of urticaria conditions are:

Allergenic Foods: (especially peanuts, eggs, nuts, fruits, milk and shellfish) the severity of the reaction can vary from mild, involving localized hives, to severe, leading to a systemic reaction known as anaphylaxis. It can cause urticaria through an immune system response known as allergic reaction. Here is a breakdown of the process:

i. Sensitization: a person becomes sensitized to a specific allergenic food after initial exposure. During this exposure, the immune systems recognize certain proteins in the food as foreign or harmful.

ii. Allergen Exposure: upon subsequent exposure to the some food, the immune system, specifically mast cell and basophils, reacts to the allergenic proteins. These cell contain granules filled with substance, including histamine.

Medications: can indeed be a significant cause of urticarial[5]. Here is how medications can lead to the development of urticarial:

i. Allergic Reaction: some individuals allergic to specific medications. When the immune system recognizes a drug as a foreign substance, it can initiate an allergic response.
ii. Release of Histamine: Allergic reactions to medications often involve the release of histamine and other inflammatory substances. Histamine is key mediator in the development of hives.

iii. Skin Manifestation: Hives (urticarial) are a common manifestation of drug induced allergic reactions. These raised itchy welts on the skin that can vary in size and shape.

iv. Timing of onset: Medication induced urticaria typically occurs relatively soon after taking the medication, often within hours. However, in some cases, it may manifest after prolonged use of a drug [6].

v. Common Offending Drugs: certain medications are more commonly associated with causing urticaria. Example include:

   a. Antibiotics: penicillins, cephalosporins, and sulfonamides.
   b. Non-Steroidal Anti Inflammatory drugs (NSAIDs): Aspirin, and Ibuprofen.
   c. ACE Inhibitors: Used for hypertension.
   d. Radio-contrast media: Used in imaging procedures.
   e. Non Allergic Reactions: it is important to note that not all drugs induced urticarial is allergic in nature. Some medications can directly cause the release of histamine without involving the immune system.
   f. Individual Variation: Susceptibility to medication induced urticarial varies among individuals. What triggers a reaction in one person may not cause an issue on another.
   g. Systemic Symptoms: In addition to skin reactions, drug induced allergic reactions can sometimes lead to systemic symptoms such as difficulty breathing, swelling and in severe cases, anaphylaxis [7].
   h. Cross Reactivity: in cross reactivity between medications can occur. For example, an individual allergic to one type of antibiotics may react to another within the same antibiotic class.

Insects: (stings or bites) can trigger urticaria through an immune response and the release of inflammatory substances[8]. Here is an overview of how insect venom or saliva can cause urticaria:

i. Introduction of Venom or Saliva: when an insect sting or bites, it injects venom (in the case of stinging insects like bees and wasp) or saliva (in the case if biting insects like mosquitoes) into the skin.

ii. Immune System Response: the body recognizes the components of insect venom or saliva as foreign substances. This recognition triggers an immune system response [9].

iii. Release of Inflammatory Substances: Immune cells, particularly mast cells and basophils, release inflammatory substances, including histamine, in response to the perceived threat from the insects venom or saliva.

iv. Formation of Hives: the increase permeability and fluid leakage result in the characteristic wheals or hives on the skin. These raised, red welts are accompanied by itching and can vary in size and shape [10].

Systemic symptoms: in some cases, especially with multiple stings or bites, the release of inflammatory substance can cause systemic symptoms, such as nausea, dizziness, or difficulty breathing [11].

Physical Stimuli: can induce urticaria through a process known as physical urticarial (such as pressure, cold, heat, exercise or sun exposure.)

i. Pressure urticaria: is result from the application of pressure to the skin, leading to the formation of hives.

ii. Cold urticaria: is manifest as hives in response to exposure to cold temperatures, such as cold air or water.

iii. Heat urticaria: it involves the development of hives in response to an increase in body temperature, such as during exercise or hot showers.

iv. Exercise Induced urticaria**:** is leads to the developments of hives during or after physical activity[12].

Bacterial Infections: can contribute to the development of urticarial through various mechanisms, often involving an immune system response. (Including urinary tract infusion and strep throat) [13].

Viral Infections: can contribute to the development of urticaria through various mechanisms, response to the infection (Including the common cold, infection mononucleosis and hepatitis.)

Some Plants: can cause urticaria though contact or exposure, leading to a skin reaction known as contact dermatitis or allergic urticarial [14].

i. Contact with plant components: direct contact with certain plant or their components, such as leaves, stems, or sap, can introduce irritants or allergens to the skin.

ii. Allergic reactions: some individuals may be allergic to specific proteins or chemicals present in plant upon contact, the immune system recognizes these substances as foreign and initiate an allergic response [15].

Blood Transfusion: a blood transfusion can be attributed to an allergic reaction or other immune mediated responses.

a. Allergic reaction to blood components: some individuals may be allergic to specific components present in the donor blood. This can include proteins, plasma, or other substances.

Recent advancements:

Second generation of antihistamines (example cetirizine, loratadine) with fewer side effects. These newer antihistamines are preferred because they have fewer sedative side effects compared to their older counterparts[16].

Monoclonal Antibodies:

Introduction of monoclonal antibodies (examples Omalizumab and Dupilumab) as targeted therapy. Those drugs reduce histamines release and inflammation. In the body, providing relief to those with chronic urticaria conditions who may not respond to traditional treatments.

Autoimmune Link:

Emerging understanding of an autoimmune component in chronic urticaria. Advances in immunomodulatory therapies for autoimmune urticarial. The recent research has shed light on the autoimmune component of chronic urticaria. Now we understand that in some cases, the body's immune system mistakenly targets its tissues, leading to urticaria symptoms. These immunomodulatory therapies are specifically designed to address autoimmune urticarial [17].

Biologic Drug:

Biologic drugs (example Xolair) have shown promise in severe cases. They target specific pathways involved in urticarias development, providing effectives relief for patients who don’t respond to other treatments.

Corticosteroids:

Corticosteroids were used in severe cases but had side effects. Advancement short-term use of systemic corticosteroids, sparing long-term side effects. Recent studies have focused on using systemic for short duration, minimizing the risk of long term side effects while providing effectives relief for acute urticarial[18].

Omalizumab:

Omalizumab is an anti- IgE antibody approved for chronic urticaria. Reduced symptom frequency and severity of symptom in patients suffering From chronic urticaria. It is an exciting addition to our treatment options.

Dupilumab:

Dupilumab originally for atopic dermatitis, has shown effectiveness in urticarial. It targets different immune pathways providing a novel approach to managing this condition. This demonstrates the potential for repurposing existing medication to benefit patients with urticarial [19].

Lifestyle Management:

Advise patients on identifying and avoiding triggers. Emphasize the importance of stress management and encourage, educate patients to avoid triggers that can exacerbate their urticaria symptoms. These techniques also play a vital significant role in reducing the frequency and severity of outbreaks.

Personalized Medicine:

Tailoring treatment based on the product's specific subtype and triggers. Genomic and biomarker research could lead to personalized therapies. The genomic and biomarker research holds the promise of unlocking even more personalized therapies in the future to achieve better outcomes [20].

CONCLUSION

The recent advancements in urticaria infections treatment offer hope and relief to the patients. Tailored approaches, biologics, and improved anti histamines provide better outcomes in future. Also it provides a ray of hope for those living with the urticarial infection. We have made significant strides in improving the quality of life for infected patients. There is reason to be optimistic about the future of urticaria management in family and community at large.

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