

ACUTE URTICARIA IN CHILDREN

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Abstract: Acute urticaria is a common condition in children, characterized by itchy skin lesions that appear suddenly. Although usually self-limiting, it can cause significant discomfort. Triggers include infections, food allergies, and drug reactions. Management mainly involves antihistamines, with corticosteroids in more severe cases. A systematic analysis of the literature is necessary to optimize the diagnosis and treatment of acute urticaria, seeking to consolidate evidence that helps health professionals in clinical practice. This research uses the systematic literature review method, with the objective of gathering and analyzing the most relevant studies on acute urticaria in children published between 2014 and 2024. Acute urticaria presents with urticarial rashes, pruritic, and angioedema alone or in association with urticarial rashes. It can be triggered by infections, food allergies, or medications, but often the cause is idiopathic. Most episodes are self-limiting, with symptoms that disappear in less than 24 hours. Educating caregivers about possible triggers and monitoring allergic reactions are key to effective treatment. Acute urticaria in children is common but often underdiagnosed. Although most cases are self-limiting, identifying triggering factors is crucial to preventing recurrences. Proper management is critical for treatment. Educating caregivers about the condition and seeking medical attention in serious situations are essential to ensure the child's well-being.

Keywords: Acute urticaria. Allergies. Urticaria in childhood

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INTRODUCTION

Acute urticaria is a relatively common condition in children, characterized by erythematous and itchy skin lesions, which appear suddenly and can be triggered by various factors, such as infections, food, and medications. Although in most cases urticaria is self-limiting, its presentation can generate great discomfort and concern, both for the child and for their caregivers. It is estimated that up to 20% of children experience at least one episode of urticaria throughout their lifetime, which underscores the importance of understanding the factors that influence its manifestation and appropriate treatment (Kudryavtseva, A. et al, 2019).

The pathophysiological mechanisms of acute urticaria involve the release of histamine and other inflammatory mediators, which lead to vasodilation and increased vascular permeability. However, pinpointing the exact causes can be challenging, since the condition is often idiopathic. Recent studies highlight the role of viral and bacterial infections as common triggers in children, especially in younger age groups (Imbalzano, E et al, 2016).

Another relevant aspect in the study of acute childhood urticaria is the prevalence of food allergies and adverse drug reactions. Foods such as milk, eggs, and peanuts are among the main triggers in pediatric patients, as described by authors such as Santa, C et al. (2021), while antibiotics, such as penicillins, also play a significant role.

The clinical management of acute urticaria in children mainly includes the use of antihistamines to control symptoms and improve patients' quality of life. However, there is a growing discussion about the effectiveness of different generations of antihistamines, with the most modern versions having a lower incidence of side effects, such as sedation. In addition, in more severe cases, the use of corticosteroids may be necessary (Antia, C et al, 2018). These treatments aim to interrupt the cycle of itching and edema, factors that compromise children's well-being.

Despite the relative benignity of acute urticaria, it can be associated with a decrease in quality of life and affect the daily routine of patients and families. Thus, it is essential that health professionals



are prepared to identify signs of complications and provide emergency interventions when necessary. Clinical guidelines highlight the importance of a thorough evaluation, including detailed clinical history and laboratory tests, to exclude differential diagnoses and ensure appropriate treatment (Chang, J et al, 2021).

Thus, this study aims to perform a systematic review of the literature on acute urticaria in children, gathering information on risk factors, diagnostic approaches, therapeutic options, and the impact of this condition on child health. By consolidating the available evidence, it is expected to contribute to a more grounded and effective clinical practice in the treatment of pediatric acute urticaria.

Acute urticaria in children is a frequent condition, but its effective management still presents significant clinical challenges due to the diversity of triggers and the difficulty of accurate diagnosis. Although in many cases the cause is idiopathic, viral infections, food allergies, and drug reactions are among the main associated factors. In addition, therapeutic options vary widely, from the use of antihistamines to corticosteroids in more severe cases, raising the question about the efficacy and safety of each approach.

The problem question used in this review: “What are the main triggering factors, diagnostic methods, and most effective therapeutic strategies in the management of acute urticaria in children, according to the available scientific literature?”. This research seeks to investigate, through a systematic review of the literature, the main scientific advances that guide clinical practice in the treatment of pediatric acute urticaria, aiming to consolidate evidence to optimize the diagnosis and treatment of this condition.

The general objective was to analyze the main triggering factors, diagnostic methods and therapeutic strategies for the management of acute urticaria in children, based on a systematic review of the scientific literature. The specific objectives are: (i) to identify the main etiological factors associated with acute urticaria in children, such as infections, food and medications; (ii) to evaluate the diagnostic methods used in clinical practice to differentiate acute urticaria from other pediatric allergic and dermatological conditions; (iii) to compare the efficacy and safety of different therapeutic approaches,



focusing on the use of antihistamines and corticosteroids, in the treatment of acute childhood urticaria.

Acute urticaria, despite being widely recognized in clinical practice, there are still gaps in the understanding of the factors that trigger acute urticaria in children, as well as the most effective methods for its diagnosis and treatment (Imbalzano, E et al, 2016). The medical literature points out that infections, food allergies, and medications are among the main triggers, but the proper management of these cases varies according to the severity and underlying cause. Thus, a systematic analysis of the available studies is essential to offer clearer and more informed guidance to health professionals.

In addition, advancement in the treatment of acute childhood urticaria depends on a deeper understanding of the effectiveness of different therapeutic approaches, such as the use of antihistamines and corticosteroids. A systematic review can gather and compare the results of previous clinical studies and reviews, enabling a more cohesive view of the most appropriate therapeutic options to ensure symptom relief safely. By addressing these knowledge gaps, this research is justified by its contribution to the improvement of pediatric clinical practice, allowing a more efficient management of acute urticaria and, consequently, promoting a better quality of life for pediatric patients.

METHODOLOGY

This research uses the systematic literature review method, with the objective of gathering and analyzing the most relevant studies on acute urticaria in children published between 2014 and 2024. Systematic review is a structured approach that allows the identification, critical evaluation, and synthesis of the results of multiple scientific studies, ensuring a complete overview of the subject. This methodology is widely used in literature reviews to ensure that the data collected is comprehensive, rigorous, and adequate to answer the proposed research question.

The collection of studies was carried out in the scientific databases: PubMed, Scielo, Google Scholar, using standardized descriptors in Portuguese and English. The search terms were: acute urticaria in children, treatment of acute urticaria, diagnosis of acute urticaria, and triggers of acute urticaria. The



combination of these descriptors was used to ensure the broad capture of relevant articles, avoiding the exclusion of studies essential for the understanding of the theme, with the use of the Boolean terms “AND” and “OR”.

The inclusion criteria established for the selection of articles included: original studies, systematic reviews, and literature reviews on acute urticaria in children, published between 2014 and 2024, with full texts available in Portuguese or English, with information on etiological factors, diagnostic methods, or therapeutic approaches to the condition.

Studies outside the pediatric population that were not related to the management of acute urticaria, as well as publications that were not available in full text or did not undergo peer review, were excluded.

After the selection of the articles and detailed reading of the titles and abstracts, followed by a complete evaluation of the texts that met the inclusion criteria. The data extracted from the studies were organized in a table containing information such as the year of publication, country of origin, type of study, number of participants, main triggering factors, diagnostic methods used, and therapeutic approaches described. The qualitative analysis of the results allowed the identification of frequent approaches and trends in the management of acute urticaria in children over the last decade.

Finally, the results were synthesized and discussed in the light of the proposed objectives, identifying the main contributions of the literature to the pediatric clinical practice of acute urticaria and suggesting possible areas for future research. By using a rigorous and systematic method, this literature review offers a comprehensive and up-to-date view of the diagnosis and treatment of acute childhood urticaria, helping health professionals and researchers to make more informed and evidence-based decisions.



RESULTS AND DISCUSSION

RESULTS

After an extensive search, 6 main publications were selected for the composition of this article, presented in Chart 2. With a description of the title, authors, year of publication, objectives, methodology and conclusions.

Chart 2 – Articles analyzed according to selection from the systematic review.

TITLE	AUTHOR/YEAR	GOALS	METHODOLOGY	CONCLUSIONS
Clinical practice guideline for diagnosis and management of urticaria	Limpongsanurak et al. (2016)	Inform about clinical practice guidelines for diagnosis and management of urticaria.	Bibliographic review.	The only strong, evidence-based alternative regimen for CSU is an anti-IgE: omalizumab; due at a very high cost, however, it may not be affordable in lower-middle-income countries. Non-pharmacotherapeutic means for Minimizing hyper-responsiveness of the skin are also important and recommended, such as preventing skin dryness, avoiding hot bath, rubbing and excessive exposure to the sun.
Acute urticaria in children: from pediatric emergency department to allergology consultation at a central hospital	Santa et al. (2021)	To characterize the prevalence, etiology, and management of acute urticaria in children who present themselves to an emergency department of a Portuguese central hospital and report to follow-up investigation when drug or food allergy is suspected.	Prospective study of clinical records of children admitted to the emergency room with acute conditions urticaria over a period of one year.	These data suggest that allergy is not the main trigger of acute urticaria in children with ED, but when suspected, reference to an allergy department to complete the allergological investigation was insufficient.



<p>A Case of Urticaria Multiforme in a Child</p>	<p>Santos et al. (2020)</p>	<p>OBJECTIVE: To report the case of a 1-year-and-9-month-old child with exuberant skin lesions associated with systemic manifestations, with complete recovery of the condition after treatment with antihistamines and intravenous corticosteroids in an intensive care unit.</p>	<p>Case report.</p>	<p>Urticaria multiforme is an acute hypersensitivity reaction, being a morphological subtype of urticaria. It is more common in children and, since its clinical presentation resembles other dermatoses, such as erythema multiforme, urticarian vasculitis, and sero-like disease, it has been underdiagnosed.</p>
<p>Acute urticaria and anaphylaxis: differences and similarities in clinical management</p>	<p>Ensina et al. (2022)</p>	<p>To analyze the differences and similarities in the clinical management of acute urticaria and anaphylaxis, in order to identify appropriate treatment guidelines and interventions to optimize the care of patients with these conditions.</p>	<p>Bibliographic review.</p>	<p>Acute urticaria is a common condition presenting with papules and/or angioedema. However, these symptoms are also frequent in anaphylaxis, a potentially fatal reaction which should be immediately diagnosed and treated. In both, mast cells play a central role in pathophysiology. The causes and triggers of acute urticaria and anaphylaxis are similar in general, but some peculiarities can be observed. The diagnostic approach. They may differ, according to the condition, suspected causes, age groups and regions. Adrenaline is the first-line treatment for anaphylaxis, but not for acute urticaria, where H1 antihistamines are the first choice.</p>
<p>Urticaria in children and adolescents: an updated review of the pathogenesis and management</p>	<p>Kudryavtseva et al. (2019)</p>	<p>The present research represents the most recent data on the diagnosis and management of Infantile urticaria.</p>	<p>Case study.</p>	<p>It was noted that, unlike the 2014 guidelines, the 2018 clinical practice guidelines for the diagnosis and management of urticaria again recommend a 4-step treatment regimen, designating omalizumab for Step 3 and cyclosporine A for Step 4, in case the therapeutic efficacy of the previous step is low or impossible. Leukotriene antagonists (LTRAs) have been removed from basic management and are now considered for alternative programs.</p>



Source: Sá, J.B. and collaborators.

DISCUSSION

According to Limpongsanurak et al. (2016) Urticaria, a heterogeneous group of diseases, is characterized by papules and rashes that sometimes present concomitantly with angioedema (edema in the deep dermis and subcutaneous tissue). Urticaria can be caused by a number of factors, including physical stimuli, immune response to food, medications, and infectious agents, or as part of inflammatory or malignant conditions. However, the most common cause is idiopathic in nature.

Pruritus is the most prevalent symptom of urticaria. Other characteristic signs include papules and rashes that vary in size, with individual papules usually disappearing within 24 hours without leaving residual hyperpigmentation. In some cases, urticaria can occur simultaneously with angioedema, which typically affects the deep dermis and subcutaneous fat, especially in areas such as the periorbital tissues, lips, tongue, and hands (Limpongsanurak et al., 2016).

Angioedema may persist for up to 72 hours, and is usually accompanied by a burning sensation and/or mild pain. Itching is uncommon in angioedema. Urticaria, with or without angioedema, may be a manifestation of anaphylaxis. Other manifestations of anaphylaxis include chest discomfort, hoarseness, wheezing, abdominal pain, and diarrhea. The respiratory distress and circulatory collapse associated with anaphylaxis can progress to anaphylactic shock, a serious and life-threatening condition (Limpongsanurak et al., 2016).

In turn, Santa et al. (2021) Children with acute urticaria were referred to the emergency department (ED) in 0.58% of the total pediatric visits, and in most cases the etiology was not determined. Upper respiratory tract infections were the most common etiologic factor. This study supported the view that allergy is not the main trigger of acute urticaria in children, with only 6 patients presenting a confirmed diagnosis of drug or food allergy, among the 50 patients with a suggestive clinical history. Most importantly, we found that in 52% of patients with suspected drug or food allergies, referral to an



allergology department for a thorough evaluation was not performed.

It is critical for physicians practicing emergency medicine to provide appropriate aftercare guidance for patients with suspected allergies and refer these patients for evaluation by an allergist to ensure a careful and thorough diagnosis. We reinforce the need for training physicians in pediatric emergencies in relation to allergic diseases, in addition to the implementation of criteria for appropriate referral for complementary investigation (Santa, C et al., 2021).

Santos et al. (2020) points out that acute annular urticaria is a morphological subtype of urticaria that occurs most frequently in children aged 4 months to 4 years. Clinically, it is characterized by erythematous or polycyclic macules, papules, or plaques, often with an ecchymotic or violaceous center. These lesions are short-lived and may be associated with angioedema. Systemic symptoms, such as fever, are usually mild and short-lived (1-3 days). The rash is self-limiting, resolving within 8 to 10 days, and may be triggered by infections or medications. The diagnosis is essentially clinical, but it is often confused with other conditions, such as erythema multiforme, urticaria vasculitis, and, rarely, serum sickness.

Urticaria vasculitis is a rare condition in children, characterized by recurrent episodes of urticaria with histopathological features of leukocytoclastic vasculitis, similar to acute hemorrhagic edema of childhood. Although more common in middle-aged adults, it should be considered in the pediatric differential diagnosis, as it can cause urticarial lesions, ecchymotic lesions

Skin lesions are itchy, last more than 24 hours, and may develop into extensive plaques with purpuric elements. Systemic symptoms such as fever, arthralgia, and malaise may also occur, in addition to gastrointestinal and ocular manifestations. The correct diagnosis is essential to avoid unnecessary tests and monitor the evolution of the condition, which can have systemic repercussions (Santos et al., 2020)

It points out that current guidelines recommend that acute urticaria generally does not require a diagnostic work-up, as it tends to be self-limiting. Although often caused by viral or infectious diseases, extensive evaluation for specific viral pathogens or antiviral therapy is not indicated unless suggested



by clinical history. (Kudryavtseva, A et al., 2019)

Recent guidelines from the European Academy of Allergology and Clinical Immunology (EAACI), the European Allergy and Asthma Network (GA2LEN), the European Dermatology Forum (EuroGuiDerm) and the Asia-Pacific Association of Allergy, Asthma and Clinical Immunology (APAAACI) state that the only exception is the suspicion of acute urticaria due to a type I food allergy in sensitized patients or the presence of other triggers, as non-steroidal anti-inflammatory drugs (NSAIDs) (Kudryavtseva, A et al., 2019).

An allergic cause is possible if the clinical history indicates a specific trigger to which the patient was exposed shortly before the onset of symptoms (usually within 1 to 2 hours of exposure). If the history suggests a possible allergy, skin tests and serological tests for allergen-specific IgE antibodies are appropriate. However, interpretation of allergy tests should be performed with caution; A positive result suggests but does not confirm an allergy, while a negative result does not exclude the possibility (Kudryavtseva, A et al., 2019).

Patient education is essential to avoid re-exposure to relevant causative factors. In some situations, it may be essential to confirm the diagnosis of allergy in acute urticaria with complementary tests in order to avoid mislabeling patients as allergic. Although skin biopsy is not indicated in most cases of acute urticaria, it can occasionally help differentiate this condition from other inflammatory disorders (Kudryavtseva, A et al., 2019).

According to Kudryavtseva et al. (2019), in most cases, acute urticaria is the only episode in the patient's life. Chronic urticaria in children also has a more favorable outcome than in adults. According to studies conducted to identify the natural course of chronic urticaria in the pediatric population, remission rates after one, three, and five years of symptom onset were 16.5-37%, 36-54%, and 50-67.5%, respectively. After seven years, 96% of children were free of urticaria, compared with adults, of whom at least 20% remain symptomatic after 10 years.

However, regression tends to occur more rapidly in children with low urticaria activity scores, controlled by standard doses of antihistamines. Currently, there are therapeutic approaches that allow



doctors to control the course of the disease and improve the quality of life of patients (Kudryavtseva, A et al., 2019).

Acute urticaria is a common childhood condition characterized by itchy rashes and edema, which can appear suddenly and usually last less than six weeks. These lesions can manifest as papules, macules, or erythematous plaques and may be of allergic origin, associated with factors such as viral infections, medications, or food. Acute urticaria can be triggered by several agents, and the identification of the responsible factor is crucial for the effective management of the condition (Tsakok, T et al, 2014).

The incidence of acute urticaria in children is significant, affecting up to 20% of the child population at some point in life. Studies have shown that most episodes of acute urticaria are self-limiting and resolve spontaneously, and clinical intervention is often required only to relieve symptoms. The condition is particularly prevalent in young children, and understanding the clinical features and triggers is essential for pediatricians and dermatologists (Caffarelli, C et al, 2019).

Management of acute urticaria in children usually involves the use of antihistamines to control itching and inflammation. According to the American Academy of Allergy, Asthma, and Immunology, second-generation antihistamines such as cetirizine and loratadine are often preferred due to their safety and efficacy profile. In addition, careful clinical evaluation and history are key to determining the need for additional interventions or diagnostic testing (Jafilan, L et al, 2015).

Although acute urticaria is usually self-limiting, it is important to monitor patients for the development of chronic urticaria or anaphylaxis. Chronic urticaria, defined as episodes lasting more than six weeks, can arise after repeated episodes of acute urticaria, and its management can be more complex. Anaphylaxis, a severe allergic reaction, can also manifest with hives and edema, requiring immediate interventions, including the administration of epinephrine (Lee, S et al, 2013).

Finally, education of patients and their caregivers about acute urticaria is critical in management. Teaching about possible triggers, such as certain foods or medications, and the importance of seeking medical attention in case of severe symptoms can help prevent future episodes. Regular follow-up and communication between health professionals and families are essential to ensure effective treatment



and improvement in the quality of life of children affected by acute urticaria.

FINAL CONSIDERATIONS

Acute urticaria in children is a common but often underdiagnosed condition that can cause significant discomfort. Although most cases are self-limiting, with spontaneous resolution, the identification of triggering factors is crucial to prevent recurrences. Understanding the clinical features and possible causes of acute urticaria allows healthcare professionals to offer more effective and targeted treatment, reducing anxiety for patients and their families.

Management of acute urticaria involves the use of antihistamines, and in more severe cases, corticosteroids may be necessary. Educating patients about the condition and its potential triggers is essential, as this can help prevent future flare-ups. It is important for caregivers to be aware of the need to seek immediate medical attention in cases of severe symptoms, such as angioedema or difficulty breathing, which may indicate a more severe allergic reaction, such as anaphylaxis.

The pathophysiology of acute urticaria in children is still limited, and further studies are needed to better understand its mechanism and associated risk factors. The continuous knowledge and updating of health professionals on management guidelines are essential to ensure quality care. In addition, multicenter studies may help elucidate the specific features of acute urticaria in the pediatric population.

Another important point is the need for a multidisciplinary approach to the management of urticaria, involving pediatricians, dermatologists, and allergists. This ensures a more comprehensive patient assessment and an appropriate treatment plan. Collaboration between specialists can make it easier to detect potential underlying conditions and ensure that patients receive the best possible care.

Finally, acute urticaria in children, although usually benign, should not be underestimated. Proper follow-up and ongoing communication between health professionals and families are essential to ensure the child's well-being. By providing a patient-centered approach and educating about the



condition, it is possible to minimize the impact of acute urticaria on the lives of children and their families, promoting a better quality of life.

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