



## Eczema vs Urticaria – not all rashes are equal

Sumari Davis, BPharm  
Amayeza Information Services

### Abstract

Although clinically distinctive, urticaria may be confused with other dermatological diseases including eczema. Eczema (also called atopic dermatitis) is a chronic pruritic inflammatory skin disorder that occurs most frequently in children but can also affect adults. Symptoms occur due to skin barrier abnormalities and the main objective of treatment is to improve inflammation and xerosis with emollients and, in some patients, low potency topical corticosteroids. In contrast, urticaria occurs in all age groups and presents as transient, distinct, round or oval lesions and severe pruritis. The goal of treatment is to relieve itching with antihistamines and to manage angioedema (if present). Identification and avoidance of triggers is recommended, where possible, to prevent future recurrences of urticaria.

### Introduction

Eczema affects approximately 5–20% of children worldwide.<sup>1</sup> In the vast majority of cases, eczema has an onset before age five years and up to 40% of cases may continue into adulthood.<sup>2</sup> Eczema is common in patients with a family history of asthma, eczema or allergic rhinitis.<sup>1</sup>

Urticaria may affect up to 25% of people at some stage in their lives, with acute urticaria seen more often in children and chronic urticaria occurring more often in adults.<sup>3</sup>

Although both eczema and urticaria present with erythematous and pruritic lesions, the causes, triggers and management of these two conditions differ.

### Definitions and diagnosis

#### Eczema

Eczema is a relapsing-remitting chronic pruritic inflammatory skin condition.<sup>4,5</sup> It commonly occurs in children, with onset between two and six months of age (usually before one year), but can affect patients of all ages.<sup>3,5</sup> Eczema is characterised by dry, red, itchy skin and presentation varies with age.<sup>3,6</sup>

- In infants younger than two years of age, eczema presents with red, itchy, weeping or scaly and crusted lesions on the scalp (cradle cap), face, trunk and extensor surfaces of the limbs.<sup>6</sup>
- As the child gets older, eczema more commonly involves the flexural surfaces but can be widespread and also affects the hands, wrists, ankles, feet, face and trunk. Acute lesions initially present as red papules, sometimes with vesiculation and oozing but, over time, excoriation, scaling, lichenification and thickened plaques may develop.<sup>3</sup>
- In adults, eczema presents predominantly with lichenified plaques, although exudative forms can also be seen. Adults often present with chronic hand eczema, eyelid eczema and facial dermatitis.<sup>6</sup>

#### Urticaria

In contrast to eczema, urticarial lesions are self-limiting and of short duration, usually resolving within 24 hours without scarring.<sup>7,8</sup> Lesions can occur on any part of the body but areas where clothing compresses the skin (e.g. under waistbands) may be affected more dramatically. Compressed areas may become more severely affected once the restrictive clothing is removed.

Urticaria presents as circumscribed, erythematous, smooth, elevated papules, or plaques (wheals), often with central pallor, associated with intense itching.<sup>9</sup> Lesions vary in size from one to several centimetres in diameter and may be round

or oval or have a wavy margin. Lesions may coalesce as they grow larger.<sup>9</sup> Although episodes resolve quickly, they can recur. Urticaria with episodes recurring for less than six weeks is classified as acute urticaria, and if recurrence continues at least twice a week for longer than six weeks, it is classified as chronic spontaneous urticaria.<sup>7,8</sup> Urticaria and angioedema are seen in combination in around 40–50% of patients where angioedema can include swelling of mucous membranes, the extremities, face, eyelids, lips and/or genitalia. In rare cases, urticaria can involve the respiratory tract and can be a prelude to anaphylaxis.<sup>3,7-9</sup>

## Causes and triggers

### Eczema

Eczema is caused by a dysfunctional skin barrier and dysregulation of the immune system due to genetic, immunological and environmental factors. Dysfunction of the skin barrier results in excessive water loss and possible penetration of environmental irritants, allergens and microbes.<sup>1</sup> Exacerbating factors that disrupt an already abnormal skin barrier and cause acute flares include:<sup>10</sup>

- excessive bathing without subsequent moisturising,
- low humidity environments,
- dry skin (xerosis),
- overheating of skin,
- exposure to irritants such as solvents and detergents, and
- emotional stress.

Patients with eczema also tend to respond more readily to pruritic stimuli and anything that tends to induce itch in an individual should be avoided.<sup>10</sup>

### Urticaria

Common causes of urticaria include allergic reactions to foods, medication, insect stings or bites and infections. Exposure activates mast cells and basophils in the superficial dermis through various mechanisms to release multiple mediators, including histamine (which causes itching) and vasodilatory mediators (which cause localised swelling in the uppermost layers of the skin). It is usually easier to identify the cause of acute urticaria compared to chronic urticaria. The following factors can cause urticaria:<sup>8</sup>

- Nuts, eggs, milk, soy and wheat most commonly cause urticaria in children and fish, shellfish, and nuts are the most common culprits in adults. Other causes may include meat, vegetables (tomatoes, onions, garlic, peas, beans and carrots), fruits (citrus fruits, pineapple, peaches, grapes, strawberries, bananas, plums and apples), mushrooms, fermented foods, spices and spirits.
- Preservatives, colourants, benzoic acid derivatives and salicylates used in food are also important causes of urticaria. Reactions are usually seen within 30 minutes to two hours of ingestion.<sup>8,9</sup>
- Any medication can cause urticaria, but the most commonly implicated ones include penicillin and cephalosporins, aspirin, nonsteroidal anti-inflammatories, sulphonamides, thiazide diuretics, oral contraceptives, angiotensin-

converting enzyme inhibitors, vitamins, codeine, morphine, synthetic adrenocorticotrophic hormone, and radio-contrast substances. Reactions following injectables may occur immediately whilst reactions following oral intake may manifest from one to two hours up to 15 days later.<sup>8</sup>

- Stinging and biting insects such as bees, wasps, hornets, bedbugs, fleas and mites can cause urticaria and should be considered, especially in children.<sup>8,9</sup>
- Infections including viral, bacterial and parasitic infections. Urticaria may follow respiratory infections such as sinusitis and tonsillitis, dental abscesses, urinary tract infections, hepatitis and infectious mononucleosis.
- Respiratory allergens such as pollen, mould spores, mites, animal dander and smoking can cause immediate urticarial reactions.
- Contact with allergens such as latex, chemicals and cosmetics.<sup>8</sup>
- Medical causes include thyroid diseases, systemic lupus erythematosus, rheumatoid arthritis, lymphoma, leukaemia, carcinomas, hormonal changes during the second half of the menstrual cycle and during pregnancy (called pruritic urticarial papules and plaques of pregnancy).<sup>7,8</sup>
- Physical causes include cold, pressure, heat, exercise, vibration, water and sunlight.<sup>7,8</sup>
- Psychogenic causes include stress, sadness and depression.<sup>8</sup>

Some types of urticaria may also be hereditary, such as familial cold urticaria and for some types of urticaria no cause may be found in which case it is referred to as idiopathic urticaria.

## Management

### Eczema

The main goal of treatment is to improve inflammation and xerosis and to reduce the frequency and severity of flares.<sup>4</sup> The cornerstone of treatment to reduce inflammation involves the use of emollients. Some patients may also need anti-inflammatory medications. Frequent application of emollients reduces water loss and improves xerosis, reduces pruritis, prevents flares and reduces the need for anti-inflammatory medication. The choice of moisturiser depends on patient preference and should be soothing and not irritating to the skin. Daily adherence to moisturisation is more important than the specific product selected.<sup>4</sup>

Topical corticosteroids (TCS) are effective in the treatment of eczema and application once or twice daily is recommended during an acute flare. Treatment with TCS should be stopped once the affected areas are smooth and no longer red and itchy.<sup>4</sup> Factors that should be considered when choosing a product include the age of the patient and the location, size and degree of skin inflammation of affected areas.<sup>4,10</sup> Low potency TCS such as hydrocortisone 1–2% is recommended for treatment of the face, neck, skinfolds and groin areas in both children and adults while moderate potency TCS such as betamethasone 0.5% is recommended for treatment of the trunk and extremities.<sup>4,10,11</sup> Higher potencies may be required for short periods in treatment of refractory or lichenified areas.

Some patients may need intermittent maintenance treatment (application once or twice a week to areas prone to flare) with low potency TCS.<sup>4</sup>

Other options include the use of topical calcineurin inhibitors such as tacrolimus or pimecrolimus as second-line treatment or the topical phosphodiesterase type 4 (PDE4) inhibitor crisaborole (not available in South Africa) to control inflammation.<sup>4</sup> Patients who are not optimally controlled with topical therapy may require phototherapy or systemic therapy with ciclosporin, methotrexate, azathioprine, or mycophenolate mofetil or a biological agent such as dupilimumab (not available in South Africa).<sup>4,11</sup> Systemic corticosteroid use is not recommended due to the side-effects with chronic systemic use.<sup>4</sup>

## Urticaria

The focus of treatment for acute urticaria should be on immediate relief of pruritis and angioedema (if present). Although corticosteroids are not recommended for isolated urticaria, they may be used for a few days in patients presenting with angioedema.<sup>9</sup> Since acute urticaria is self-limiting and around two thirds of cases resolve spontaneously, treatment recommendations are derived from management of chronic urticaria. Second-generation non-sedating H1-antihistamines such as cetirizine, levocetirizine, loratadine, desloratadine, fexofenadine, ebastine and rupatadine constitute first-line treatment to reduce itching and help clear lesions.<sup>9</sup> Rupatadine differs from other antihistamines in that it also has antiplatelet-activating factor activity. Platelet activating factor (PAF) plays a role in inflammation and induces wheal and flare skin reactions. Rupatadine therefore improves urticaria via both antihistamine and anti-inflammatory action.<sup>12</sup> Second-generation antihistamines are preferred as they have a longer duration of action with less sedation when compared to first-generation antihistamines. A bedtime dose of a first-generation antihistamine may be beneficial in low-risk (young, healthy) patients who struggle to sleep due to itching.<sup>8</sup>

For more severe symptoms, an H2-antihistamine such as ranitidine or cimetidine may be added to an H1-antihistamine and for those patients with persistent symptoms or prominent angioedema, oral corticosteroids may be added for five to seven days.<sup>9</sup> For patients whose symptoms resolve after discontinuation of oral corticosteroid treatment, oral antihistamine treatment may also be stopped. However, if symptoms recur following discontinuation of medication, the patient should continue with daily antihistamine treatment at

the lowest effective dose.<sup>8,9</sup>

It is important to question the patient about any infections, travel, exposure to heat, exercise, recent travel, new foods or beverages and new medication or supplement use shortly before the onset of urticaria in order to try and establish the trigger. Where a trigger can be identified, it should be avoided, if possible, to prevent future episodes.<sup>9</sup>

Other treatment options for patients with persistent symptoms despite continuous antihistamine and or corticosteroid treatment include omalizumab, montelukast or ciclosporin. Loratadine or cetirizine may be considered for treatment of urticaria in pregnant or lactating patients with urticaria.<sup>9</sup>

## Conclusion

Although eczema and isolated urticaria are considered non-life-threatening diseases, the unrelenting pruritis, unsightly lesions and disfiguration can have a major impact on a patient's quality of life. The pharmacist can provide much needed relief through counselling and assistance in choosing optimal treatment for many of these patients.<sup>13</sup>

## References

1. Weston WL, Howe W. Atopic dermatitis (eczema): Pathogenesis, clinic manifestations, and diagnosis. In: UpToDate. Waltham, MA. 2020.
2. Sinclair W, Aboobaker J, Green R, et al. Guidelines on the management of atopic dermatitis in South Africa. SAMJ. May 2008;98(4 Pt 2):303-19.
3. Katelaris CH, Peake JE. 5: Allergy and the skin: eczema and chronic urticaria. Medical Journal of Australia. 2006 Nov;185(9):517-22.
4. Weinstein M, Barber K, Bergman J, et al. Atopic dermatitis: A practical guide to management. Eczema Society of Canada. Updated September 2018; Accessed 29 Jan 2020. Available from: [https://eczemahelp.ca/wp-content/uploads/2019/03/ESC\\_AD\\_Practical-Guide-to-Management-for-HCP\\_2019.pdf](https://eczemahelp.ca/wp-content/uploads/2019/03/ESC_AD_Practical-Guide-to-Management-for-HCP_2019.pdf).
5. Eichenfield LF, Ahluwalia J, Waldman A, et al. Current guidelines for the evaluation and management of atopic dermatitis: A comparison of the Joint Task Force Practice Parameter and American Academy of Dermatology guidelines. J Allergy Clin Immunol. 2017;139:549-57.
6. Weston WL, Howe W. Overview of dermatitis (eczema). In: UpToDate. Waltham, MA. 2020.
7. Wong HK. Acute urticaria. Medscape. Updated 21 March 2018; Accessed 29 Jan 2020. Available from: <https://emedicine.medscape.com/article/137362-clinical>.
8. Kayiran MA, Akdeniz N. Diagnosis and treatment of urticaria in primary care. North Clin Istanbul. 2019;6(1):93-99.
9. Asero R. New-onset urticaria. In: UpToDate. Waltham, MA. 2020.
10. Weston WL, Howe W. Treatment of atopic dermatitis (eczema). In: UpToDate. Waltham, MA. 2020.
11. South African Medicines Formulary, 12th Edition. 2016. Cape Town: South African Medical Association.
12. Ridolo E, Montagni M, Fassio F, et al. Rupatadine for the treatment of allergic rhinitis and urticaria: a look at the clinical data. Clinical Investigation. 2014 May;4(5):453-61.
13. Blenkinsopp A, Paxton P, Blenkinsopp J. Symptoms in the pharmacy. 7th ed. New York: Wiley-Blackwell; 2014.