

Seminar

Atopic dermatitis

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Atopic dermatitis is a highly pruritic chronic inflammatory skin disorder affecting 10–20% of children worldwide. Symptoms can persist or begin in adulthood. It is also the most common cause of occupational skin disease in adults. This disease results from an interaction between susceptibility genes, the host's environment, pharmacological abnormalities, skin barrier defects, and immunological factors. New management approaches have evolved from advances in our understanding of the pathobiology of this common skin disorder.

Atopic dermatitis is a highly pruritic chronic inflammatory skin disease that commonly presents during early infancy and childhood but can persist or start in adulthood.¹ Interest in this disease has been sparked by reports of its increasing prevalence and the significant adverse effects it can have on quality of life. At least two types of atopic dermatitis have been identified: an extrinsic type associated with IgE-mediated sensitisation, which affects 70–80% of patients; and an intrinsic type without IgE-mediated sensitisation, which affects 20–30% of patients.² Here, we will discuss some of the advances in our understanding of this disease and new treatment approaches that have been introduced.

Epidemiology

Atopic dermatitis is a major public-health problem worldwide with a lifetime prevalence in children of 10–20%, and a prevalence of 1–3% in adults.³ Prevalence of this disease has increased by two to three-fold during the past three decades in industrialised countries, but remains much lower in agricultural regions such as China, eastern Europe, and rural Africa. Moreover, higher prevalences have been recorded in urban regions than in rural regions of developed countries, and the disease is more common in higher social class groups.⁴

Wide variations in prevalence have been identified within countries inhabited by similar ethnic groups, suggesting that environmental factors determine expression of atopic dermatitis.⁵ Results of comparative studies in former east and west Germany have confirmed that lifestyle and environment play a major part in expression of atopic diseases, including atopic dermatitis.⁶ Some of the risk factors associated with the rise in atopic disease include small family size, increased income and education, migration from rural to urban environments, and increased use of antibiotics—ie, the so-called western lifestyle.⁷ These observations are lent support by studies⁸ in which allergic responses were shown to be driven by T-helper type (Th) 2 immune responses, whereas infections are induced by Th1 immune responses. Since

Th1 responses antagonise development of Th2 cells, a decreased number of infections or the absence of Th1 polarising signals (such as endotoxin) during early childhood could predispose children to enhanced Th2 allergic responses.

Clinical diagnosis

Atopic dermatitis offers a wide clinical spectrum ranging from minor forms such as pityriasis alba (dry depigmented patches) or hand eczema to major forms with erythrodermic rash. The most common forms include the clinical features listed in panel 1.⁹ Of the major features, pruritus and chronic or relapsing eczematous lesions with typical shape and distribution are essential for diagnosis. Although pruritus can occur throughout the day, it is usually worse in the early evening and night. Pruritus results in scratching, lichenification, and prurigo papules. Patients with atopic dermatitis have a reduced threshold for pruritus. Allergens, reduced humidity, excessive sweating, and low concentrations of irritants can exacerbate pruritus and scratching.

Acute and subacute skin lesions (figure 1) are often seen in children and are characterised by intensely pruritic erythematous papules associated with excoriation and serous exudate. Chronic atopic dermatitis is characterised by lichenification, papules, and excoriations. At all stages of this disease, patients usually have dry lacklustre skin. The distribution and skin reaction pattern varies according to the patient's age and disease activity. During infancy, atopic dermatitis is generally more acute and mainly affects the face, scalp, and extensor surfaces of the extremities. In older children and in those who have long-standing skin disease, the patient develops lichenification and localisation of the rash to the flexural folds of the extremities. Chronic hand eczema can be the primary manifestation of many adults with atopic dermatitis. Panel 2 lists other disorders that share symptoms and signs with atopic dermatitis. These should be considered and ruled out before a diagnosis of atopic dermatitis is made.

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Search strategy and selection criteria

We did a computer-aided search of PubMed from 1990 through May, 2002, for aspects of atopic dermatitis pertinent to this review, to supplement our existing awareness of the primary published work. We searched using the keywords atopic dermatitis and eczema. Because of limitations on the number of citations, we made selections from the 2043 reports published on atopic dermatitis in the past decade to support our interpretations with criteria for assessing experimental studies and evidence-based medicine.