

Atopic dermatitis

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Definition

Atopic dermatitis (AD) (syn. atopic eczema) is an intensely itching chronic inflammatory skin disease featuring hyperreactivity to environmental triggers (*figure 5*). Many patients with AD have elevated serum and skin IgE antibodies directed against common food and inhalant allergens, as well as a personal or family history of allergic rhinitis and asthma. The presence or absence of specific IgE and associated respiratory diseases allow the distinction of different subtypes of AD, *e.g.* allergic and non-allergic, extrinsic and intrinsic.

The pathogenesis is complex with both genetic and environmental factors playing a fundamental role. Both contribute to an excessive immune response to allergens. Skin lesions result from this aberrant immune response coupled with abnormal cutaneous reactivity and epidermal barrier dysfunction. The latter is also responsible for the dry skin which bothers so many AD patients.

Clinical features

AD is an immensely itchy eczematous disorder with a very characteristic morphological appearance which changes according to the age of the patient. Infantile AD is an exudative eruption, with erythemas, microvesiculation, oozing and crusting particularly in the head and neck areas, diaper area, forearms and wrists. In preschool and school children the eczema becomes drier and more scaly, lesions are most often found in the large flexures, the involved skin appears thickened, dry and irritable, covered with scratch marks, the face is pale. The patients are prone to develop secondary skin infections, both bacterial (pyodermas) and viral (viral warts, mollusca contagiosa, exanthematic herpes virus infection – “eczema herpeticum”, a potentially life threatening condition). Adult AD exhibits dry, red, scaly and sometimes leather-like thickened skin (lichenification). In all ages, AD may be limited to the predilection sites or involve large parts

of or the entire skin surface. The course of AD is typically undulating, with improvement in summer and exacerbations in fall and winter.

Impact

AD is a very common disease and represents a major public health problem worldwide. In the last decades, the prevalence of AD has markedly increased. As many as 20% of pre-school children in Western Europe have AD. While the prevalence and incidence of AD decrease during adolescence, the disease can persist or even start in adulthood. The prevalence of AD in adults is 2-4%. In more than 80% of cases the disease is mild; whereas in about 20%, it is moderate or severe. AD has a chronic relapsing course, and can greatly affect the quality of life of patients. In particular, severe AD may lead to loss of self-esteem, depression, and poor job prospects. Sleep loss and lack of concentration due to intense and persistent itch, as well as involvement of the hands, can lead to problems with work or school. AD may also interfere with family and social life. In financial terms, the cost of AD is great, because of both direct medical costs and indirect costs, such as time lost from work or school.

Diagnosis

Diagnosis is mostly based on clinical features. Rarely, a skin biopsy is required to exclude other skin diseases. Allergy testing (prick test/RAST, atopy patch test, exclusion and provocation diets) is important for assessing the contribution of various potential triggers. Classical patch testing may be indicated (particularly in adults) to exclude an associated allergic contact dermatitis, a common complication since AD patients are exposed to so many creams and ointments and have a weakened skin barrier.

Therapy

Cure is an unrealistic expectation. In most patients, available treatment options are able to achieve satisfactory disease control and improve skin appearance so that patients can lead a relatively normal life. The correct approach to AD patients must include the identification and the elimination of triggering environmental factors. The therapy includes appropriate skin care, as well as topical glucocorticoids and topical calcineurin inhibitors (tacrolimus and pimecrolimus). Pruritus is partially controlled by systemic antihistamines. The use of phototherapy, systemic glucocorticoids and immunosuppressive drugs should be restricted to patients with severe disease.

Prevention

Skin hydration with the regular use of emollient ointments and the avoidance of skin irritants (detergents, woolen or abrasive clothing) helps in reducing skin irritability and AD flares. Avoidance of allergens is still a matter of debate. Eradication of house dust mites seems a cost-effective and reasonable approach. Elimination diets are difficult for families and patients to follow, but may be tried in carefully selected cases with appropriate dietary advice and support. The regular use of topical calcineurin inhibitors may be helpful in blocking AD flares especially in patients with short disease-free periods. As AD often precedes asthma in children, it can serve as an important warning sign. In addition, allergen avoidance helps more to control asthma than AD.



Figure 5. Atopic dermatitis. Generalized atopic dermatitis in a 4 year old child (A); atopic dermatitis in the face of an adult (B). Comment: Atopic dermatitis is a chronic eczematous skin disease marked by dryness of the skin, extreme skin irritability and excruciating itch. When atopic dermatitis persists into adulthood, the skin may become thickened and coarsely textured (“leonine face”).