Special Considerations for Therapy of Pediatric Atopic Dermatitis

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KEYWORDS

• Atopic dermatitis • Seborrheic dermatitis • Atopic march • Pityriasis alba • Eczema coxsackium • Eczema herpeticum

KEY POINTS

- Atopic dermatitis (AD) is a chronic inflammatory skin and multisystem disease that affects children differently in different age categories.
- Consideration for the presence of comorbidities is important in caring for the pediatric AD patient.
- Infantile AD can be complicated by overlap with irritant contact dermatitis and seborrheic dermatitis.
- School-aged children with AD often suffer intercurrent infections with viral and bacterial pathogens.
- Teenagers with AD may have impaired body images and are more prone to specific types of allergic contact dermatitis.

INTRODUCTION

Atopic dermatitis (AD) is a multisystem inflammatory disorder that exists within the spectrum of diseases of atopy, that is AD, food and environmental allergies, and asthma, all of which are becoming more prevalent. Most atopic diseases begin in childhood, with 85% of AD cases starting by age 5 years and about one-quarter of children experiencing wheezing or eczema symptoms by their late teen years.[1,2] The prevalence of atopic illnesses has increased 2- to 5-fold since the 1960s in developing countries in children and adolescents, with a recent estimate of 17.2% in 5- to 9-year-old children from Oregon.[3–5] Mirroring this, asthma was noted to have a prevalence rising from the 1960s to the 1980s of 183 to 284 per 100,000, with the increase being accounted for by children ages 1 to 14 years, and especially increased for children with a parent who has had asthma.[6,7] AD has a wide reaching effect on childhood and quality of life can be negatively impacted in pediatric AD, mirroring the severity noted with other pediatric chronic illnesses, such as renal disease and cystic fibrosis.[8,9]

The increased prevalence of allergic illness has been accompanied by an increase in disease persistence, especially of severe AD, into the adult years. Factors associated with persistence are onset after 2 years of age and ongoing symptomatology for 10 or more years and females in meta-analysis[10]; therefore, it is crucial that we consider not just the youngest patients with AD, but the adolescent with long-standing disease, who may have ongoing symptoms for a lifetime.

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This article is divided into practical categories in AD based on the age/developmental time period of the child, that is: (1) infancy, (2) toddler years, (3) preschool and school-aged children, and (4) preteens and adolescents. The focus is kept on the clinical nuances of the disease, and comorbidities expected for age and treatment considerations both in prescribing and side effect profiles, with an ultimate goal to improve care and, therefore, quality of life in pediatric patients with AD.

INFANCY

Clinical Nuances

This brief overview includes common features noted in infancy that impact diagnosis and therapeutic considerations. The clinical nuances overlap with comorbidities, but are reviewed in only 1 section in the interest of space.

AD is defined as a pruritic eczematous condition with a chronic, relapsing course and a typical pattern of appearance, in infancy and early childhood of "facial, neck and extensor involvement," and often accompanied by early age of onset, xerosis, and other forms of atopy.[11] Eczematous plaques in infancy can occur anywhere, but are largely limited to the face and extensor extremities. Infants often scratch incessantly and before having the dexterity to scratch they will often rub or wiggle against surfaces to address itch. This action can be paired with significant sleep disturbance, especially in winter months when household heating decreases the relative humidity. Severity can range from a few limited plaques to erythrodermic appearance, which should be carefully differentiated from immunodeficiencies such as Leiner's disease.[12] Widespread disease in infancy is not uncommon owing to the impaired skin barrier and the thinner stratum corneum layer, allowing greater exposure to irritants and allergens. This phenomenon is reflected in clinical studies by an increased transepidermal water loss.[13]

Although recent guidelines indicate that AD should be diagnosed in the exclusion of irritant contact dermatitis (ICD), allergic contact dermatitis (ACD), and seborrheic dermatitis (SD; **Fig. 1**),[11] they do in fact overlap at times and these conditions may be more common in a child with AD or a predisposition to AD. AD is aggravated by skin contact with chemical and/or physical irritants such as excessive washing, soaps, and detergents.[14] Facial AD in infancy (**Fig. 2**) is generally complicated by an overlap with ICD caused by drool (aggravated with teething), messy eating, and the need for cleaning the face. Reduced indoor humidity can aggravate head and neck AD.[15] Facial AD in infancy is usually associated with cheek eczematous plaques. The presence of lesions on the lower cheek, where the saliva might pool, or under a pacifier, may point to a larger component of ICD.

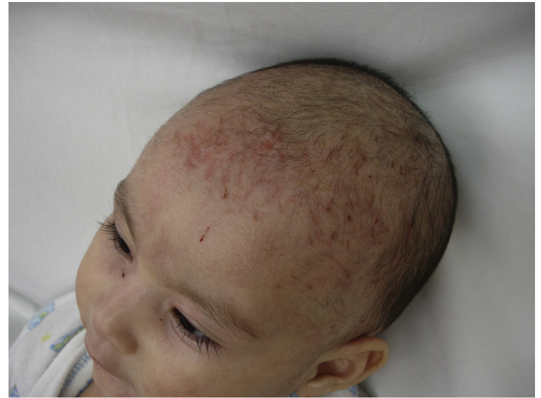

Fig. 1. Infant with atopic dermatitis and overlapping seborrheic dermatitis of the scalp.

SD may overlap with AD in infancy and it has long been felt that the overlap is not random. Alexopoulos and colleagues[16] have recently demonstrated that there is a true linkage of the 2 conditions. In their review of 87 children diagnosed

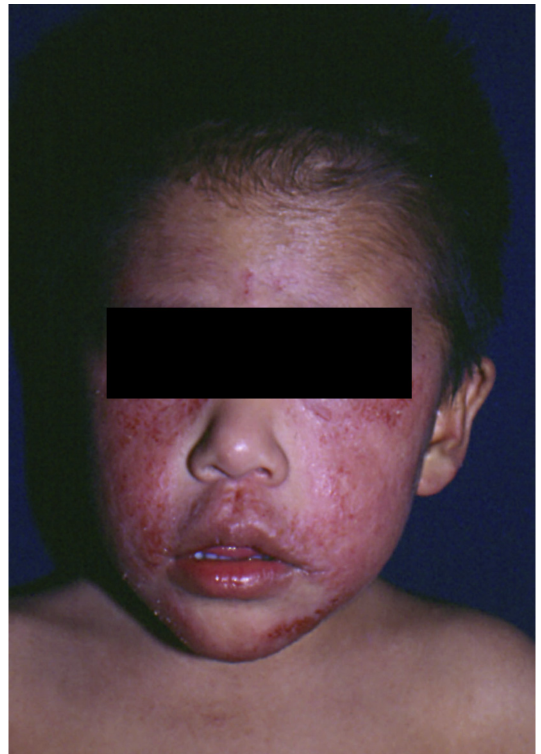

Fig. 2. Facial atopic dermatitis in infancy.

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