Diagnosis and Management of Psoriasis in Children

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KEYWORDS

• Psoriasis • Pediatric • Obesity • Metabolic syndrome • Topical steroids
• Quality of life

KEY POINTS

- The incidence and prevalence of psoriasis is increasing in the pediatric population.
- There is increasing evidence that childhood psoriasis is associated with the metabolic syndrome.
- Variants of psoriasis in childhood include chronic plaque type, scalp, guttate, inverse, diaper, and nail.
- Topical medications should be used to treat most cases of mild to moderate disease.

INTRODUCTION

Overview

Psoriasis is a common chronic scaly inflammatory condition that primarily affects the skin. In this article, what is known about the pathophysiology of the disease, its epidemiology, and overall prognosis are reviewed. The different presentations that can be seen in children as well as clues to clinical diagnosis are discussed. Although thought to primarily be a skin disorder, recent research has linked psoriasis to several comorbidities that are presented below. Finally, skin-directed therapies, which should be helpful in most patients with mild to moderate psoriasis, are discussed.

Pathophysiology

The pathophysiology behind psoriasis is not completely understood. It is thought to be an immune-mediated inflammatory disease of the skin that has a genetic predisposition. Activation of several T cells, Th-1, Th-17, and Th-22, resulting in production of specific cytokines, such as interferon-γ, tumor necrosis factor, IL-17, IL-22, and IL-23, has recently been discovered to play an important role in the development of the disease.[1,2] These cytokines then activate keratinocytes, leading to increased

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inflammatory cells and products at the skin site.[3] Epidermal hyperplasia and proliferation of keratinocytes are also a hallmark of psoriasis, which may be due to induction by activated T lymphocytes via inflammatory cytokine response and to an increase in cell cycle turnover.[4]

There is also a known genetic component to psoriasis; those with a first-degree relative with psoriasis have an approximately 5-fold increased risk of developing the disease as compared with the general population,[5] and many children with psoriasis have a first-degree relative with the disease.[6,7] Furthermore, monozygotic twins have a higher concordance rate than dizygotic twins of developing psoriasis.[8] Several candidate chromosomal regions, termed PSORS1 to PSORS10, have been linked to a risk of developing psoriasis.[9] There is a strong association of the HLA-Cw6 allele with early-onset disease. Several other gene regions, including those encoding some of the implicated interleukins, have also been identified in some affected populations.[3] Although attempts to identify precise etiologic factors continue, it has become apparent that development of the disease results from a complex interplay of both genetic and environmental factors.

Epidemiology

Psoriasis is one of the most common inflammatory skin conditions affecting both children and adults. The worldwide prevalence of psoriasis is estimated at approximately 4%, with ranges from 0% to 8.5% depending on the population studied.[10] In children prevalence is estimated to be as high as 0.71%, with increasing prevalence as age increases to a high of 1.2% at age 18.[11] Incidence of the disease is steadily increasing with a 2-fold increase in both children and adults since 1970.[12] Approximately one-third of patients develop the disease in childhood, with a median age of 10.6 years at first diagnosis. Although psoriasis can develop at any age, cases of congenital psoriasis are extremely rare[13] but up to 27% of children may develop it before age 2.[7] There does not seem to be a gender bias in childhood; when all subtypes of psoriasis are considered, boys and girls develop the disease at equal rates.[7,12]

Prognosis

Psoriasis is a life-long condition that tends to have a chronic relapsing course. Fortunately, most affected children will have mild disease. Often, mild disease is well-controlled with topical medications requiring intermittent treatment. Some patients with psoriasis are able to achieve complete remission that may last several years. Children are more likely than adults to have the guttate form of psoriasis (described below); those with guttate psoriasis may clear their skin completely without recurrence, develop disease again with streptococcal infection, or go on to develop chronic plaque-type psoriasis. A minority of children with psoriasis unfortunately may worsen with age and may have more severe and widespread involvement, requiring more aggressive treatment.

CLINICAL FEATURES

History

The history and presenting symptoms may differ depending on the age of the child and type of psoriasis. Infants with psoriasis most commonly present with a persistent diaper rash that has been refractory to multiple treatments. Older children may present with an asymptomatic scaly rash and/or with refractory or severe dandruff or “cradle cap.”[7] Many children with psoriasis are asymptomatic but many may also present with pruritus and decreased sleep as a result; this is particularly true with psoriasis of the