Pediatric Psoriasis: An Interview With Nanette B. Silverberg, MD

Pediatric psoriasis has a complex pathogenesis and is associated with unique presentations, comorbidities, and quality-of-life impairments. As such, children with psoriasis require specialized care and may not benefit from the same approaches used in adult patients. This interview provides expert insight into the management of psoriasis in the pediatric population as well as an overview of treatment options.

What causes psoriasis in children?

Psoriasis is a chronic immune-mediated inflammatory skin disease with a genetic predisposition (Eichenfield et al). Similar to many inflammatory skin diseases, school-aged children have a greater predisposition before or in early adolescence. As with adult disease, pediatric psoriasis has a complex pathogenesis largely related to aberrant immune response to triggers such as infections (eg, streptococcal pharyngitis, perianal streptococcal dermatitis, upper respiratory viral infections), trauma (ie, Koebner phenomenon), stress, and obesity.

What are the emerging data and recommendations on screening for comorbidities in children with psoriasis?

Similar to psoriasis in adults, obesity and the metabolic syndrome are a true association with pediatric psoriasis that has been discussed in the literature (Eichenfield et al). Although many children with psoriasis have obesity as a potential comorbidity, the risk of cardiovascular comorbidities independent of obesity is high in pediatric psoriasis including elevated lipids, hypertension, polycystic ovaries, nonalcoholic liver disease, and elevated liver enzymes (Tollefson et al). Children with psoriasis have greater central obesity and adiposity, often accompanied by a family history of obesity. Interventions in this direction may be needed for long-term disease control and general health (Mercy and Paller). One target population is hospitalized children with psoriasis, particularly black and Hispanic children aged 0 to 9 years. This population has been identified to have a greater risk for obesity, diabetes mellitus, hypertension, arrhythmia, and valvular heart disease (Kwa et al). Therefore, it can be said that dermatologists can help to improve the overall health and lifestyle long-term in children with psoriasis.

Early-onset disease also is associated with greater risk for lifetime quality-of-life impairments including poor lifetime dermatology life quality index scores, depression and psoriasis-induced depression, social discrimination, sleep problems, and recreational drug usage (Kim et al).

How does psoriasis in children differ from adults?

Children have a variety of features that differ from adult disease. First, they are more likely to have an infectious trigger and therefore may have an identifiable treatable source. Second, they are more likely to have a family history of disease, with one-third having a relative with psoriasis, therefore, identifying the child at risk for long-standing disease. Third, children have far more visible head and neck disease, especially facial involvement including eyelids (Raychaudhuri and Gross), which increases the risk of bullying, social stigma, and negative effects on self-image. Of course, site is affected by age, and in infancy diaper dermatitis and inverse disease with maceration and overlying candidal diaper dermatitis can occur. Although children have less joint disease, it can be dramatic and crippling to the developing child.

What treatments are available for children?

In childhood, identification of precipitating infections such as streptococcal infection is ideal with appropriate intervention thereafter. Topical therapies are

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appropriate for limited disease with minimal disability; however, phototherapy and systemic agents can be used in pediatric psoriasis in extensive cases. Topical therapies can include corticosteroids, calcineurin inhibitors often used in sensitive skin such as the face and intertriginous areas, and calcipotriene (Eichenfield et al). Additional agents such as tar and salicylic acid can be used, with limitations on the latter due to risk for absorption in smaller children. Systemic interventions often are introduced after years of disease. A recent study identified practitioners with special interest in pediatric psoriasis and determined that systemic interventions were on average introduced 3 years after psoriasis was diagnosed and most commonly included methotrexate followed by etanercept, the latter having fewer gastrointestinal tract side effects. The panel found that usage of folic acid 6 days weekly minimized gastrointestinal tract side effects with methotrexate. Acitretin and cyclosporine were alternatives (Bronckers et al; Psoriasis Investigator Group [PsIG] of the Pediatric Dermatology Research Alliance and the European Working Group on Pediatric Psoriasis [EWGPP]).

Recently, dermatologists have become aware of the dramatic benefits of immune response modifiers and some biologics on pediatric psoriasis. In the setting of joint and skin involvement, I allow the rheumatologist to make the choice of agents for the child's best outcome. However, for pediatric and adolescent psoriasis, we now have 2 US Food and Drug Administration–approved agents and more rapid and thorough testing of adult-approved agents in children, with a hope of greater ability to modify disease course at a younger age, both now and in the future.

Which biologics are approved for the pediatric patient population?

Currently, in the United States 2 biologics have been approved: (1) etanercept, a fusion protein of tumor necrosis factor receptor extracellular domain linked to the Fc portion of human IgG, for moderate to severe plaque psoriasis in patients 4 years and older, and (2) ustekinumab, a human IgG1κ monoclonal antibody against the shared p40 subunit of the IL-12 and IL-23 cytokines, for moderate to severe plaque psoriasis in patients 12 years and older based on the encouraging data of the CADMUS trial (Kellen et al; Landells et al). In Europe, adalimumab has been approved as a first-line therapy in pediatric psoriasis (age ≥4 years), and etanercept (age ≥6 years) and ustekinumab (age ≥12 years) have been approved as second-line agents, all with grade A evidence, according to a recent Italian panel (Fortina et al). (A thorough review of the guidelines on screening, administration, and vaccination is available from Eichenfield et al.)

What treatments are in the pipeline?

In the United States we have clinical trials ongoing of adult-approved topical and immune response–modifying agents such as apremilast. These agents, as they become available and the data are gathered, will be added to what I refer to as our "pharmamentarium" of agents we can use to combat a difficult and disabling illness.

What gaps are there in the pediatric psoriasis research?

Currently, there is poor awareness that there is research for pediatric psoriasis, and there is a need for pediatric groups and the National Psoriasis Foundation to allow children, adolescents, and their families to know that clinical trials are available looking into newer, more targeted, and less immunosuppressive agents. There is new hope on the horizon!

SUGGESTED READINGS

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