Acne in infants and children has considerable range, both in terms of the age at which it presents as well as its presentation. There are four general recognized types of early acne in children: neonatal acne, infantile acne, mid-childhood acne, and pre-adolescent acne. Each of these classifications may encompass a variety of manifestations and challenge our understanding of pediatric acne. Following are descriptions of each of the four categories, as well as diagnostic tips and suggestions for therapy.

**Neonatal Acne.** The term “neonatal acne” can be misleading because it is often used to describe many different pustular eruptions in babies. A common one is Neonatal Cephalic Pustulosis. This condition has the appearance of acne; however, the absence of acneiform papules (comedones) suggests that it may not be true acne but, instead, a distinct disorder. Neonatal cephalic pustulosis occurs in the first weeks of life and presents as erythematous papules and pustules on the face, neck, scalp, and torso. It is associated with skin colonization by *Malassezia* species (*M. sympodialis* and *globosa*) in some patients, though it remains controversial whether the *Malassezia* is pathogenic. The disease is self-limited, and many families and physicians chose not to treat with medication. For those who prefer treatment, prompt response is often noted with anti-yeast agents, such as ketoconazole. Non-responders likely do not have pustules colonized with *Malassezia*, and some neonates actually present with comedonal acne.

**Infantile Acne.** For infants up until approximately 12-18 months of age, infantile acne is more commonly characterized by classic comedonal lesions, as well as papules, pustules, cysts, nodules, and scars. For these patients, standard approaches to therapy include topical treatments, such as benzoyl peroxide, retinoids, antibiotics, and combination approaches. While these agents form the mainstay of therapy, systemic treatments, such as oral antibiotics and isotretinoin, should be considered in rare severe and recalcitrant cases. In a limited study, isotretinoin has been shown to be safe and effective when used within a range of 0.2mg/kg/day and 1.5mg/kg/day. Since oral isotretinoin does not come in liquid or suspension form, it can be challenging to administer to young patients. This is further complicated by the fact that isotretinoin is a light and oxygen-labile drug, requiring administration soon after breaking open the pill. In order to improve ease of administration, families may consider placing pill contents in apple sauce or freezing the pill inside some form of candy or chocolate bar prior to splitting them both in half. This, of course, is “very off-label” use of isotretinoin.

**Mid-childhood Acne.** Mid-childhood acne is often mistaken for a variety of other conditions, including keratosis pilaris, milia, rosacea, periorificial dermatitis, and demodex. True mid-childhood acne can be one of the more worrisome forms of acne. Its onset is between the ages of approximately 18 months and seven years. Acne in this age group may be linked to premature adrenarche, Cushing’s syndrome, congenital adrenal hyperplasia (CAH), gonadal/adrenal tumors, and true precocious puberty. As a result, in patients with persistent, severe, or virilizing mid-childhood acne, laboratory and clinical work-up are recommended.

**Overcoming the Challenges of Pediatric Acne**

Acne can affect children as well as adolescents and adults and can be associated with significant medical issues. Find out what you should look for.

By Caroline D. S. Piggott, MD and Lawrence F. Eichenfield, MD
suggested evaluation includes placement on an age-appropriate growth chart, scans to determine bone age, tanner staging, total/free testosterone, DHEA-S, androstenedione, LH, FSH, prolactin, and 17-OH progesterone levels. Regarding treatment, topical and oral medications are preferred, however it should be noted that tetracyclines should not be used in patients less than eight years of age.

Pre-pubertal acne. Comedones are common in the face and neck regions in pre-teens, while truncal acne is uncommon. Acne in the eight- to 12-year-old period may actually be among the first indicators of puberty, particularly given its correlation with increased sebum output and enlargement in sebaceous follicles. P. acnes colonization in follicles also plays a key role in acne, particularly in inflammatory papules, pustules, and cystic lesions. Several studies on pre-teens have shown that the prevalence and severity of acne correlates with advanced pubertal maturation.5-7 Furthermore, severe acne in teenagers is commonly seen in patients with significant numbers of comedones during the pre-menarchal years and is associated with higher levels of DHEA-S and total/free testosterone levels compared to females with milder acne severity.

Indications for therapy include a combination of factors, including the physician’s, parental, and the patient’s own assessment of acne significance/severity. First line treatments include topical agents such as benzoyl peroxide, benzoyl peroxide-antibiotic combinations, retinoids, retinoid-benzoyl peroxide combinations, or retinoid-antibiotic combinations. Moderate to severe cases may require more than topical treatment, however. Interestingly, options appear to be increasing in number as the database on treatments for early acne treatment (mono- or combination therapy) is rapidly growing.

From a pathogenic standpoint, retinoids appear to be a sensible option, and they help minimize reliance on antibiotics. Unfortunately, while acne vulgaris is reported in greater than 75 percent of children younger than age 12, little data exists on the use of retinoids in this age range. For patients 12 years and younger, the tretinoin 0.04% pump (Retin-A Micro Pump, Ortho-Dermatologics) may represent an effective therapy. A recent study presented at the 2010 Meeting of the American Academy of Dermatology in Miami evaluated this tretinoin pump in patients eight to 12 years of age with mild-to-moderate acne vulgaris (EGSS 2-3; 0-5 scale; n=40; 5 to 100 non-inflammatory lesions and 0-40 inflammatory lesions).8 Results showed statistically significant decreases in EGS and AEGSS (P<0.001), with 75 percent graded as almost clear or mild. Moreover, total lesion counts decreased by 49.8 percent, inflammatory lesions decreased by 53.7 percent, and non-inflammatory lesions by 39.8 percent. The tretinoin pump was also well tolerated, with only mild and transient cutaneous irritation reported. Importantly, there were no discontinuations of therapy due to adverse events and objective cutaneous irritation scores were low.

A Clinically Significant Presentation
Acne in children is a clinically significant, albeit understudied, field in pediatric dermatology. As new studies on the safety and efficacy of acne medicine for pre-teens and younger children are published, pediatricians and dermatologists will be better prepared to help children with this clinically and psychosocially significant disease.

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