A HEALTHY 4-WEEK-OLD INFANT WITH ACNE

BACKGROUND AND TREATMENT PLAN

The patient is a 4-week-old infant with widespread lesions of the head and neck (Figure 1), including papules, pustules, and comedones. The lesions began to appear shortly after birth. A full physical examination and review of systems were normal, and the child was otherwise healthy. Watchful waiting, accompanied by reassurance of the child’s parents, was chosen as the initial treatment for this patient. The lesions spontaneously resolved over the following 3 weeks.

Many infants and neonates develop rash that is characterized by varying degrees of acne, seborrheic dermatitis, milia, miliaria, tinea versicolor, sebaceous hyperplasia, or neonatal cephalic pustulosis. Acne in these patients may include both inflammatory and noninflammatory (comedonal) lesions. In an otherwise healthy child, neonatal or infantile acne is usually caused by increased sebaceous gland activity that is secondary to elevated adrenal androgens (in females), or elevated adrenal or testicular androgens (in males). In one study, lesion counts and selected biopsies were performed for 22 infants with neonatal acne (the mean age at onset was 3 weeks). Some of the children had comedonal acne only, although papules and pustules were noted for more than 70% of the patients. A family history of severe acne was identified for only 3 of the children. Biopsies revealed hyperplastic sebaceous glands similar to those typically encountered in older children and adults with acne. The investigators also identified keratin plugging of the sebaceous follicles. Smears for Pityrosporum ovale—the microorganism that is associated with tinea versicolor and neonatal cephalic pustulosis—were negative. The authors proposed that these findings support a role of transient sebaceous gland activity stimulated by neonatal androgens.

As many as 20% of neonates exhibit a uniform pattern of inflammatory red papules or pustules of the cheeks, eyelids, forehead, occipital scalp, neck, and upper chest. Comedones and scarring are absent. Although this presentation has been referred to as neonatal cephalic pustulosis, it is unclear whether this represents a condition that is distinct from neonatal acne. Some researchers have suggested that neonatal cephalic pustulosis may reflect skin colonization by the lipophilic yeast genus Malassezia. Bernier et al cultured 102 consecutive neonates and their mothers for Malassezia species, and related Malassezia carriage to the probability of cephalic pustulosis; follow-up cultures were performed for 56 of the children and their mothers again after 3 weeks. At birth, 11 of the neonates and 36 of the mothers were positive for Malassezia species, and related Malassezia carriage to the probability of cephalic pustulosis. Follow-up cultures were performed for 56 of the children and their mothers again after 3 weeks. At birth, 11 of the neonates and 36 of the mothers were positive for Malassezia species, and related Malassezia carriage to the probability of cephalic pustulosis; follow-up cultures were performed for 56 of the children and their mothers again after 3 weeks. At birth, 11 of the neonates and 36 of the mothers were positive for Malassezia species. At 3 weeks, 29 of the neonates (52%) and 18 mothers (32%) were positive. Malassezia carriage among the neonates was associated with increased prevalence and severity of cephalic pustulosis between birth and the age of 3 weeks. It has been hypothesized that the uniform lesions that characterize neonatal cephalic pustulosis may result from follicular occlusion caused by an inflammatory reaction to this lipophilic yeast.

ACNE CASE STUDIES*

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What topical agents may be considered for the treatment of neonatal or infantile acne?
Evaluation of neonatal acne should include assessment of growth parameters, evidence of precocious sexual maturation, and blood pressure. In rare cases, neonatal acne reflects an inborn error of adrenal metabolism, which will also produce other signs of hyperandrogenism. In a child with severe acne and normal growth parameters, assessment of bone age is a good screening study to exclude endocrinologic disorders. Watchful waiting, with reassurance and counseling of the parents, is usually the best treatment for neonatal or infantile acne. Acne in these patients usually resolves spontaneously within 4 weeks. Low-risk topical agents (e.g., a topical benzoyl peroxide or topical antibiotic) for a short period of time may be considered when the lesions persist. Alternatively, an oral antibiotic may be considered in rare cases. For severe inflammatory acne in otherwise healthy infants, oral antibiotics may be indicated to reduce the risk of scarring.

Evidence-Based Practice Recommendation

I. Practice Recommendation: According to acne management guidelines developed by the American Academy of Dermatology, laboratory endocrinologic evaluation (e.g., for androgen excess) is indicated for children with acne who have signs of androgen excess (e.g., body odor, axillary or pubic hair, and clitoromegaly). In prepubertal children, testing of bone age using a hand film is a specific screening method for androgen excess that may be used before hormonal testing.

Name of AAFP-Approved Source: American Academy of Dermatology: Guidelines of Care for Acne Vulgaris Management.


Strength of Evidence: The American Academy of Dermatology expert consensus panel found little evidence that routine endocrinologic evaluation is of value for patients with acne, as most patients with acne exhibit hormone concentrations within the normal range. The panel identified 2 cohort studies with a total population of 884 patients showing an association between acne and androgen excess in patients who have other signs of hyperandrogenism, and recommended hormonal testing for these individuals (strength of recommendation, B). Bone age was identified as an effective screening tool for selecting candidates for hormonal testing in prepubertal children (consensus opinion; strength of recommendation, C).
Healthy Teenage Boy with Skin of Color Requiring Acne Therapy

Background and Treatment Plan

The patient is a healthy 14-year-old black male with mixed comedonal and inflammatory acne (Figure 2). He has used an over-the-counter acne scrub and cleanser without improvement. The patient began therapy with adapalene 0.1% cream 3 times per week (Monday, Wednesday, and Friday) at bedtime, and a benzoyl peroxide wash before showering. He was also instructed that treatment for 4 to 6 weeks might be necessary before his acne improved, and he was instructed to continue treatment even after his acne began to improve. He was also educated about skin care, including the use of gentle cleansers to avoid skin irritation, avoiding washing more than twice per day, and about the use of nonirritating, noncomedogenic products such as moisturizer and sunscreen.

Evidence-Based Practice Recommendation

II. Practice Recommendation: Patients of color who have acne are at high risk of scarring and postinflammatory hyperpigmentation. Topical retinoids improve acne symptoms and also reduce postinflammatory hyperpigmentation in these patients.


Strength of Evidence: One study has specifically assessed the response to acne treatment in black patients. This open-label, single-group study of 65 patients conducted in South Africa found that topical adapalene 0.1% gel reduced the number of hyperpigmented macules or the density of hyperpigmentation in approximately 66% of the patients. A second randomized, investigator-blinded study of 167 patients of color found improved hyperpigmentation with adapalene 0.1% gel or tretinoin microsphere 0.04% or 0.1% gel. The lower-strength tretinoin microsphere gel produced a greater reduction in hyperpigmentation from baseline, possibly due to better tolerability (strength of recommendation, B).

Do topical acne therapies reduce postinflammatory hyperpigmentation in patients of color with acne?

Early and aggressive acne management is especially important for patients of color who are at increased risk of postinflammatory hyperpigmentation and keloidal scarring.8 Although topical acne treatments may produce skin irritation, they are also very effective for the management of both comedonal and inflammatory acne in patients with darker skin pigmentation. Some patients may require additional depigmenting therapy (eg, with topical hydroquinone), although this is usually not necessary. Topical retinoids or benzoyl peroxide may be used as maintenance therapy to prevent formation of new comedones. Sunscreen and sun protection are important for all patients, including those with darkly pigmented skin.

Clinical studies have demonstrated that topical retinoids are effective for acne therapy in patients of color, and that they also reduce postinflammatory hyperpigmentation.9 The risk of irritation when beginning therapy may be minimized by initially applying the retinoid 2 to 3 times per week, and then gradually increasing the frequency of application. Regardless of the patient’s skin color, combination therapy for acne is often more effective than treatment with a single agent. One recent clinical study examined the efficacy of a topical gel containing benzoyl peroxide 5% and clindamycin 1% for patients of different racial and ethnic groups in a community setting. This topical combination was administered with one of 3 topical retinoids—tretinoin microsphere 0.04%, tretinoin microsphere 0.1%, or adapalene gel 0.1%.10 All 3 of the regimens improved acne symptoms and reduced hyperpigmentation in patients of color.
Oral antibiotics are often used for patients with severe acne, or for patients with moderate acne who have not responded adequately to topical therapies. For patients who are treated with oral antibiotics, the addition of topical benzoyl peroxide or retinoid therapy accelerates the response to treatment and reduces the risk of developing resistance to the oral antibiotic. Other factors that may reduce the risk of antibiotic resistance include avoiding the use of oral and topical antibiotics with chemically different antibiotics and using oral antibiotics for the shortest time possible.

CONCLUSIONS

Neonatal and infantile acne are common and typically resolve spontaneously after a few weeks. In patients of color, acne is often accompanied by postinflammatory hyperpigmentation. Combinations of topical agents (eg, benzoyl peroxide, antibiotic, and retinoid) improve acne symptoms in patients of color, and may also improve postinflammatory hyperpigmentation.

REFERENCES

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