

## The science and art of treating acne in adolescence

**QUESTIONS:** A 16-year-old adolescent boy is in the office for a physical examination before participating in a sports program. He would also like his acne treated (see figure 1). What type of acne does this patient have and how would you approach his treatment?

A 14-year-old boy is in the office for acne treatment (see figure 2). He reports having used an over-the-counter preparation containing benzyl peroxide without any success. What type of acne does this patient have and what agents would you use to treat his acne?

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Figure 1



Figure 2

**ANSWERS:** It is important to classify the types of lesion in order to choose the most effective therapy.

The 16-year-old boy has comedonal or obstructive acne (figure 1). Open and closed comedones are visible but there is no evidence of inflammatory lesions. The pathophysiologic mechanism here is the obstruction of the sebaceous follicle by increased turnover and cohesiveness of the cells that line the follicle. The most effective treatment involves using comedolytic agents, such as retinoid or azelaic acid (see box), which can reduce the increased turnover and cohesiveness of the follicular epithelium and stop acne production.

Explain to the adolescent that this treatment will not work overnight and, in fact, the acne may worsen for 2 weeks before it gets better. If the patient understands this explanation and trusts in the care provided, he may suc-

ceed in getting the long-term benefits of the topical retinoid (tretinoin [Retin-A] or adapalene [Differin]). If use of a single agent does not lead to a good response, coupling the use of a retinoid with benzoyl peroxide or with azelaic acid can have a synergistic effect.

The 14-year-old boy has inflammatory acne (figure 2). In addition to comedones, he also has papules, pustules, and nodules. These lesions are produced by the proliferation of *Propionibacterium acnes*, which produces free fatty acids that irritate the distended follicular wall. The follicle wall is disrupted and the extrusion of *Propionibacterium acnes*, hair, and cells into the dermis induces the inflammatory response and leads to the development of inflammatory lesions.

Effective treatment requires killing the *Propionibacterium acnes* microorganisms as well as reducing the com-

edonal obstructions. This boy's acne is moderately severe and has not responded to a single topical agent. Therefore, it is reasonable to prescribe an oral antibiotic to reduce the overgrowth of *Propionibacterium acnes*. Oral antibiotics for acne include tetracycline, doxycycline, minocycline, and erythromycin. Benzamycin, a topical gel that contains benzoyl peroxide and erythromycin, was prescribed. When this therapy did not work adequately, a topical retinoid was added to his treatment regimen. If these medications do not produce adequate results within 6 months, the patient may be a candidate for isotretinoin (Accutane) therapy.

A 17-year-old girl who is using a topical retinoid in the evening and taking doxycycline orally in the morning to treat acne has erythema across her cheeks from a day at the beach (figure 3). Increased sun sensitivity is a common reaction to both doxycycline and topical retinoids. Because adolescents often spend time in the sun and may not use protective sunscreens and clothing, it is essential to discuss this reaction and be prepared to modify their therapy if needed.

Other therapeutic options available for this adolescent include changing the oral antibiotic to erythromycin or minocycline, which are not associated with sun sensitivity, or changing the topical medication to Benzamycin. Because the patient's underlying acne is inflammatory, it needs to be treated with some maintenance medication that is bacteriocidal. Another treatment option is the birth control pill; it is useful for adolescent girls that are sexually

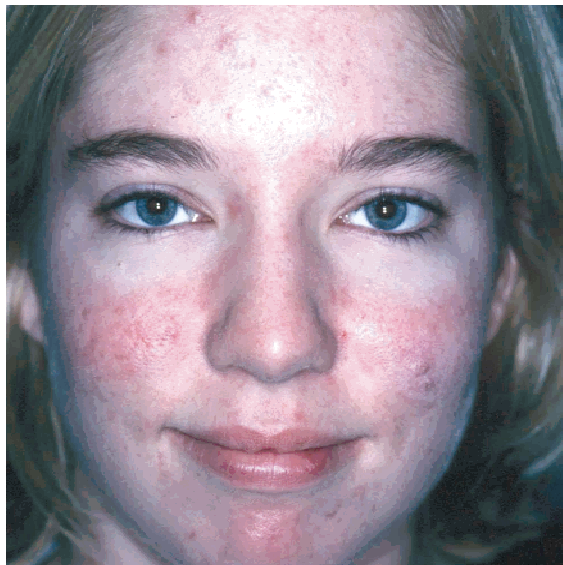


Figure 3

### Acne therapy by severity\*

#### Obstructive or comedonal acne - mild

- Tretinoin or adapalene (Retin-A or Differin) azelaic acid (Azelex)
- Benzoyl peroxide
- No place for oral antibiotics

#### Mild papulopustular acne

- Topical antibiotics and benzoyl peroxide (Benzamycin)
- May add oral antibiotics if topical agents are not effective
- Tretinoin or adapalene (Retin-A or Differin)
- Azelaic acid (Azelex)

#### Moderate papulopustular acne

- May start with topical antibiotic, benzoyl peroxide, and oral antibiotic
- Oral antibiotics are often essential at this stage
- Tretinoin or adapalene (Retin-A or Differin)
- Consider stopping oral antibiotics when topical agents are working well
- Consider birth control pills in females
- Consider isotretinoin (Accutane), if other therapies are not working in 6 months

#### Severe nodular or nodulocystic or scarring acne

- May try combinations of agents above
- Isotretinoin (Accutane)

Adapted from Usatine R, Quan M, Strick R.  
Acne—a treatment update. *Hospital Pract* 1998;  
February 15:111-127

active and have acne. The birth control pill can improve acne by reducing sebum production (see p 166).

The overall goals of acne treatment are to: lessen the physical discomfort from inflamed lesions, improve the adolescent's appearance, prevent scarring, and avoid the adverse psychological impact of acne (low self-esteem, loss of self-confidence, social isolation, and depression).<sup>1</sup> Successful management of acne has its roots in patient education and the promotion of compliance. It is helpful to explain the pathogenesis of acne and the rationale behind its treatment so adolescents can feel like active participants in their care.

#### Reference

- 1 Usatine R, Quan M, Strick R. Acne - a treatment update. *Hospital Pract* 1998;February 15:111-127.