

Acne and Related Disorders in Women

Part 3: Treatment modalities for acne

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Notwithstanding the testimonials seen on late-night television infomercials for acne preparations, there is no “one size fits all” treatment for acne. In fact, the active ingredients in these advertised preparations can usually be obtained less expensively in other over-the-counter products. Over-the-counter products effectively manage many cases of mild acne, but prescription medications may be required for severe cases.

In this issue, I will present a summary of the various topical agents that are available to manage acne. In upcoming issues, I will discuss oral medications, surgical procedures, and other treatments for specific types of acne and related disorders.

FIRST-LINE TOPICAL AGENTS

When choosing treatment for the various types of acne, the modes of action of each agent should be considered. Dermatologists generally employ these agents in various combinations and in conjunction with oral antibiotics, if necessary.

RETINOIDS

The retinoids (Table 1) are primarily comedolytic (ie, they treat comedones); they also have anti-inflammatory effects. In addition, retinoids facilitate the pene-

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Table 1. Retinoids

Brand Name	Generic Name	Advantages/disadvantages
Retin-A cream, gel	Tretinoin	Available in various strengths and less expensive generic formulations. Often irritating.
Retin-A Micro topical gel	Tretinoin	Less irritating than Retin-A. One strength.
Avita cream, gel	Tretinoin	Less irritating than Retin-A. One strength.
Differin gel, solution	Adapalene	Less irritating than Retin-A; less sun sensitivity than Retin-A. One strength.
Tazorac gel	Tazarotene	Possibly more effective and faster acting than Retin-A. Two strengths. Irritating; expensive.

tration of other topical anti-acne agents. All retinoids may produce sun sensitivity. These prescription drugs should not be used during pregnancy or breastfeeding (although no studies show them to be harmful to the fetus). Retin-A is the standard to which other retinoids are compared because it was the first one available.

BENZOYL PEROXIDE

Potent antibacterial agents, benzoyl peroxide preparations (Table 2) improve both inflammatory and non-inflammatory lesions (comedones). They dry and peel the skin, and they help to clear blocked follicles.

Benzoyl peroxide may be used alone to treat mild acne, but for more severe cases, it should be used in conjunction with topical retinoids, topical azelaic acid (Azelex), or topical or systemic antibiotics. Lower-strength (eg, 2.5%) preparations are less irritating and

Table 2. Benzoyl peroxide

Advantages	Disadvantages
Available over the counter.	Often irritating (causes stinging, redness, and scaling).
No reported bacterial resistance.	Contact sensitivity may occasionally occur.
Available in many formulations, including cream and liquid. (Water-based gels are less irritating than alcohol-based preparations.)	May bleach clothing and bed linen.

probably as effective as the 5% and 10% concentrations. The addition of zinc to benzoyl peroxide in several newer products, such as Triaz, may enhance efficacy.

Benzoyl peroxide is an ingredient of many brand-name over-the-counter products, such as Clearasil and Oxy 5 and 10, as well as less-expensive generic products. These products include both water- and alcohol-based vehicles; some are soaps, medicated pads, and washes. The soaps and washes may not be as effective as the lotions, creams, or gels, which will not wash off the skin as readily. Some patients prefer tinted formulations that can be used as concealers.

Prescription benzoyl peroxide formulations are probably no more effective than over-the-counter products. Bear in mind, though, that generic products may vary from batch to batch in terms of their quality control and the inert ingredients they contain.

TOPICAL ANTIBIOTICS

Preparations that contain the topical antibiotics clindamycin and erythromycin (Table 3) are active against *Propionibacterium acnes*. In addition to their antibacterial action, these drugs have an anti-inflammatory action that helps to clear inflammatory acne lesions (papules and pustules). Topical antibiotics can also be used to treat rosacea, perioral dermatitis, and other acne-like conditions.

Clindamycin and erythromycin are considered equally effective. Drug resistance has been reported with topical antibiotics, including both clindamycin and erythromycin. The combination of 3% erythromycin and 5% benzoyl peroxide gel (Benzamycin gel) may be used to prevent resistance of *P acnes* to erythromycin, because no resistance has ever been reported when benzoyl peroxide is included in the therapy.

OTHER PRESCRIPTION DRUGS

Other topical prescription anti-acne or anti-rosacea drugs (Table 4) include newer agents, such as azelaic acid, and older preparations that contain sulfur and sodium sulfacetamide. These medications are used as alternatives or adjuncts to retinoids, benzoyl peroxide, and topical clindamycin and erythromycin. They are second-line therapy for acne. Formulations with metronidazole, whose mechanism of action is not understood, are first-line topical treatments for rosacea.

OTHER OVER-THE-COUNTER PRODUCTS

Many over-the-counter products contain ingredients that have been used for acne for many generations without great success. However, for children just beginning to develop acne or for patients with very mild acne, gentle topical peeling agents (such as salicylic

Table 3. Prescription topical antibiotics

Brand Name	Generic Name	Advantages/disadvantages
A/T/S solution, gel; Emgel topical gel	Erythromycin 2%	Effective for postadolescent acne, rosacea. Irritation is infrequent. Often used in conjunction with benzoyl peroxide and/or retinoids. Bacterial resistance is possible.
Akne-Mycin ointment	Erythromycin 2%	Least irritating topical antibiotic. Excellent for atopic skin. Somewhat messy to apply.
Cleocin T solution, gel, lotion	Clindamycin 1%	Effective for postadolescent acne, rosacea. Lotion is less irritating than solution and gel. Bacterial resistance is possible.
Benzamycin gel	Erythromycin 3% and benzoyl peroxide 5%	More potent than either agent used alone (combination has synergistic effect). No bacterial resistance. Expensive, must refrigerate, often irritating (but less irritating than benzoyl peroxide used alone). May bleach clothing and bed linen.

Table 4. Other topical prescription agents

Brand Name	Generic Name	Advantages/disadvantages
Azelex cream	Azelaic acid 20%	Used as an alternative to or in conjunction with retinoids or benzoyl peroxide. May lighten postinflammatory darkening due to acne. Reduces both comedonal and inflammatory lesions. Probably not as effective as other agents. Irritation is common.
Sulfacet-R lotion; Novacet lotion	Sodium sulfacetamide 10% and sulfur 5%	Effective for rosacea. Tinted preparation may be a good camouflage in fair-skinned patients. Not as effective as topical antibiotics.
Noritate cream	Metronidazole 1%	Most effective for rosacea. Once daily application. Less irritation than metronidazole.
MetroGel, MetroCream, MetroLotion	Metronidazole 0.75%	Most effective for rosacea. Twice daily application.
Klaron lotion	Sodium sulfacetamide 10%	Minimal reported irritation. Effective for rosacea. Clear, water-based lotion. Probably not as effective as metronidazole for acne or rosacea.

acid or glycolic acid) or anti-inflammatory agents (such as resorcinol and sulfur) may be helpful. None of these agents are very effective for the treatment of moderate-to-severe acne.

α-HYDROXY ACIDS CONTAINING GLYCOLIC ACID

Also known as fruit acids, α-hydroxy acids (AHAs) that contain glycolic acid have become very popular. Although they are not comedolytic, they may help some patients with mild acne, particularly when used in combination with topical retinoids. AHAs loosen the bond of dead skin cells and thus accelerate exfoliation. They also appear to smooth and repair photoaged skin.

Over-the-counter products contain low concentrations of AHA. Peels and products applied and dispensed by physicians for the treatment of wrinkles and pigmentary disorders are stronger and much more effective exfoliating agents.

β-HYDROXY ACIDS

Because they are lipid soluble, β-hydroxy acids (BHAs), such as 2% salicylic acid soaps and scrubs, penetrate more deeply than do AHAs. In addition to promoting cell turnover, BHAs have mild comedolytic

and anti-inflammatory effects on acne. Creams, lotions, and pads that contain salicylic acid are more effective than washes or scrubs. Used in conjunction with benzoyl peroxide, retinoids, or topical antibiotics, BHAs may eventually play a more important role in the management of acne.

RETINOLS

Although retinols were originally marketed to fight aging skin, they are currently being touted for use in treating acne. Their efficacy in acne has not been scientifically tested.

MULTI-INGREDIENT OVER-THE-COUNTER PRODUCTS

There are numerous products that contain various combinations of resorcinol, aloe, glycolic acid, sulfur, and salicylic acid. Also, there are herbal remedies with aloe and benzoyl peroxide, some of which contain bentonite as a tint. Such products are difficult to evaluate clinically.

Pore cleansing strips lift out solidified sebum and dead cells that clog open pores. They temporarily remove blackheads and may occasionally cause mild irritation.