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Current therapy

Cosmetics in the Treatment of Acne Vulgaris

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Worldwide, acne vulgaris is one of the skin disorders for which patients most frequently consult the dermatologist. In most cases, the cause of this disease—which can be chronic—remains an enigma. Because acne is limited to the skin of the head, chest, and upper arms, aggressive topical therapy that minimizes or eliminates the use of oral drugs (particularly oral antibiotics) and the attendant risks of antibiotic resistance, drug toxicity, and drug interaction is desirable. Fortunately, there are topical products available which when used properly can ameliorate or palliate the signs of acne and significantly improve the patients' appearance and self esteem (Box 1) [1–5].

Training programs provide dermatology residents with basic knowledge of the fundamentals of acne vulgaris: demographics, pathology, and medical treatment. In the private practice setting, patients require more individualized care and attention. Patients ask questions about cosmetics, and the dermatologist should be prepared to give informed advice to assure compliance and successful treatment outcome [3].

What differentiates drugs, cosmetics, and cosmeceuticals?

The drugs, devices and cosmetics used in the practice of dermatology are regulated by the Food and Drug Administration under the congressionally mandated Food, Drug, and Cosmetic Act. According to this act, a drug is an "article intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease in man or any other animals... intended to affect the structure or any function of the body." A cosmetic is defined as an "article intended to be rubbed, poured, sprinkled, or sprayed on the human body for the purpose of cleansing, beautifying, promoting attractiveness, or altering the appearance without affecting the body's structure or function." Drugs undergo rigorous premarket approval in an effort to demonstrate safety and efficacy. Cosmetics, on the other hand, should not make therapeutic claims and must be in compliance with the Fair Packaging and Labeling Act. Safety is assumed. The regulations prohibit cosmetics from being adulterated or misbranded and include strict requirements for packaging and labeling, including "the declaration of ingredients." There are over 5000 cosmetic ingredients. For the dermatologist, the ingredient panel is the key to understanding how the cosmetic will perform and its appropriateness for a given patient. The intent, however, is that the consumer should be able to determine whether a specific ingredient could render the cosmetic harmful. Currently, the Food, Drug, and Cosmetic Act does not recognize the term "cosmeceutical"; therefore, the products referred to will be categorized as either drugs or cosmetics [6–8].

Antiacne drugs

Standard therapy for acne vulgaris and nodulocystic acne is based on well-characterized pathophysiologic changes and the correlative clinical signs. Accordingly, patients with comedones are candidates

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Box 1. Function of common cosmetic ingredients

- **Propylene glycol:** humectant, skin conditioning, viscosity-decreasing agent, solvent
- **Glycerin:** humectant, emollient
- **Stearic acid:** surfactant/cleansing agent, surfactant/emulsifying agent
- **Glyceryl stearate:** skin-conditioning agent/emollient, surfactant/emulsifying agent
- **Laureth-23:** surfactant/cleansing agent, surfactant/solubilizing agent
- **Isopropyl palmitate:** binder, skin conditioner/emollient
- **Cetyl alcohol:** emulsion stabilizer, opacifyer, surfactant/emulsifier, surfactant/foam booster, viscosity-increasing agent (aqueous and nonaqueous)
- **Stearyl alcohol:** emulsion stabilizer, surfactant, foam booster, viscosity increaser
- **Soy sterol:** skin conditioner/emollient
- **Hydrolyzed collagen:** skin and hair conditioner
- **Dimethicone:** antifoaming agent, skin conditioner/occlusive
- **Safflower oil:** skin conditioner/occlusive
- **Methyl/propyl paraben:** preservative
- **Triethanolamine:** pH adjuster
- **Sodium hydroxide:** preservative, pH adjuster
- **Ascorbic acid:** antioxidant, pH adjuster

This data is not intended to be all-inclusive.

for topical retinoids. Patients with papular lesions respond to retinoids in conjunction with benzoyl peroxide. As pustular lesions develop, topical antibiotics are added to the retinoid and benzoyl peroxide applications. Therefore, a patient whose disease is similar to that depicted in Fig. 1 would apply a topical antibiotic followed by a prescription formulation of 10% benzoyl peroxide lotion in the morning and a high-potency 0.1% retinoid cream followed a topical antibiotic at night. Combination products are available (erythromycin or clindamycin with benzoyl peroxide); the concentrations of active drug may be less than individually manufactured products,

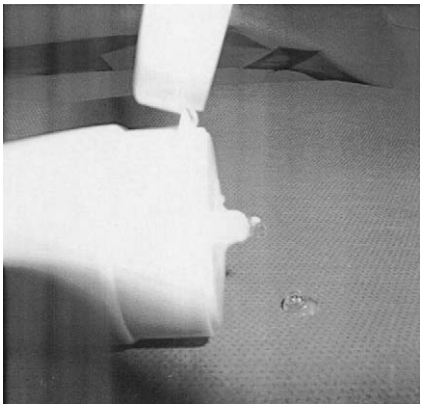

Fig. 1. Clear gel moisturizer.

and it may be more difficult to define the causative agent should an adverse event occur. Benzoyl peroxide in lotion or aqueous solution and tretinoin in a cream base may be preferable and less drying (Box 2) (Table 1) [2,3].

Cosmetics

Cleansers

The spectrum of skin cleansing products appropriate for acne patients includes: lipid-free cleansers, synthetic detergent bars (syndets), astringents, and exfollients. Lipid-free cleansers contain moisturizing ingredients and are pH-formulated (pH 4.3–6.5) for skin compatibility (pH 6.0). Ideally, lipid free cleansers should not contain dyes, fragrances, or sensitizing preservatives (parabens); the ingredient panel should contain fewer than 10 chemicals. These cleansers are good choices for patients in the initial treatment phase while the skin is adapting to topical medications. Syndet bars tend to be more alkaline; however, those containing zinc or salicylic acid may be used after the skin has regained its barrier integrity. Astringents (toners) are alcohol-based leave-on liquids that help remove oil from the skin and are excellent for makeup removal. Exfoliates, which are designed for very oily skin, are astringents with

Box 2. Pathophysiology of acne vulgaris

- Abnormal keratinization of the follicular infundibulum
- Increased sebum production
- Colonization of the follicle by *Propionibacterium acnes*