

# Topical Acne Treatment



## Retinoids & Antibiotics

Topical acne medications are indicated for treatment of comedonal and mild inflammatory acne. New topical drugs have been developed in the last few years such as modified retinoids or new galenic formulation with improved efficacy or local tolerance. Topical retinoids are a mainstay in acne treatment since 1962. All-trans retinoic acid was the first and is still in use. Its irritative potential has led to the new galenics, i.e. incorporation in microsponges and in propolyomers, which increased the tolerability significantly. Isotretinoin, another compound of the tretinoin family has the same clinical efficacy but lower irritancy.

A real breakthrough was adapalene, a retinoid-like agent, which has an even better tolerability but still the same clinical efficacy on inflammatory and non-inflammatory acne lesions compared to tretinoin. Surprisingly, over the past few years topical retinoids have been less used in inflammatory acne than they should be. Instead, topical antimicrobials have been more frequently used. They should be used less often to avoid the development of bacteria that are resistant to antibiotics.

Benzoyl peroxide used at concentrations of 2–5% is still the gold standard for papular-pustular acne of mild-to-moderate type. Azelaic acid is good alternative with good efficacy especially for comedo treatment.

## Alpha and Beta Hydroxy Acids

*Alpha-hydroxy acids (AHA's):* The mechanism of action in acne is unknown. However, it is known that, at lower concentrations, AHA's reduce follicular corneocyte adhesion, enabling comedone elimination and preventing its formation. At higher concentrations they cause unroofing of pustules and loosening of the corneocytes that line the follicular epithelium. Citric acid and glycolic acid are the most frequently used therapy in superficial peeling. They are used only for brief exposures, at concentrations of 30, 50 or 70%.

*Beta-Hydroxy Acids:* Salicylic acid is the best known of the keratolytic agents in dermatologic therapy. This desquamative agent acts on the stratum corneum producing a dissolution of the intercellular cement and, sometimes, a moderate peeling. It acts on the interfollicular epidermis and has a comedolytic and anti-inflammatory effect. Nowadays, salicylic acid is the active ingredient in a variety of cleansers and astringent lotions. It is used at concentrations of 1 to 3%. In addition, 5% salicylic acid in propylene glycol may also be used. As compared with tretinoin and isotretinoin, salicylic acid is a mild but still effective comedolytic agent. At concentrations of 2% it is very well tolerated.

## Treatment Duration

Generally, topical acne agents require a trial period of at least 8–12 weeks to determine therapeutic benefit. During this time, the patient should be given appropriate advice to minimize the potential for adverse effects. Maintenance of improvement thereafter requires ongoing treatment with periodic tapering to establish ongoing need. When prescribing for female patients the clinician should be aware of possible teratogenicity. *The USP Drug Information for the Health Care Professional* (1999) carries the Pregnancy category C for tretinoin. To be safe, topical tretinoin should not be used during pregnancy.

## Anti-Acne Agents

### Tretinoin

keratolytic, anti-comedogenic

### Isotretinoin

keratolytic, anti-comedogenic

### Adapalene

keratolytic, anti-comedogenic, anti-inflammatory

### Tazarotene

keratolytic, anti-comedogenic, anti-inflammatory

### Azelaic Acid

keratolytic, anti-comedogenic, anti-inflammatory

### Clindamycin

antimicrobial

### Erythromycin

antimicrobial

### Tetracycline

antimicrobial

### Benzyl Peroxide

antimicrobial, keratolytic, anti-comedogenic

### Salicylic Acid

keratolytic, anti-comedogenic, antimicrobial

### Citric Acid, Glycolic Acid

keratolytic, anti-comedogenic

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