



Indian Health Service
IHS National Pharmacy and Therapeutics Committee
Formulary Brief: Use of Benzoyl Peroxide in Acne
March 2013



Background:

The IHS National Pharmacy and Therapeutics (NPTC) reviewed the medical management of acne vulgaris at their February 2013 meeting. This review included topical therapies (retinoids, antibiotics, bactericidal and other antimicrobial or anti-inflammatory agents) and oral therapies (antibiotics, isotretinoin, oral contraceptives, and antiandrogens). The oral antiandrogen, spironolactone, and combined estrogen-containing oral contraceptives were already on the IHS National Core Formulary (NCF). After the review of evidence in guidelines and Cochrane reviews involving the use of various agents for the treatment of acne, **topical tretinoin** and **topical clindamycin** were **added** to the NCF. The topical antibacterial agent, benzoyl peroxide, was felt to be readily available in numerous over-the-counter preparations. The committee did not feel that adding this to the NCF would necessarily address an issue of access to this product. However, it was felt that clinicians would benefit from a review of the important role that benzoyl peroxide plays in the treatment of acne and the prevention of bacterial resistance.

Discussion:

Acne is the most common skin disorder in the United States, affecting 40-50 million persons of all ages. It can have significant sequelae from physical scarring, persistent hyperpigmentation, and psychological issues. Acne is a chronic inflammatory disease of the pilosebaceous unit involving increased sebum production by sebaceous glands, hyperkeratinization of the follicle, colonization of the follicle by *Propionibacterium acnes*, and an inflammatory reaction. Acne is manifested with both noninflammatory (open and closed comedones) and inflammatory lesions (papules, pustules, and nodules). Inflammatory acne is graded as mild, moderate, or severe based on the frequency of the various inflammatory lesions. The goals of treatment are to reduce inflammation, the number of lesions, scarring, and psychological sequelae.

Treatment guidelines involve the use of topical retinoids for comedonal acne. Either benzoyl peroxide or topical antibiotics are added for mild to moderate acne. Severe acne involves the use of oral isotretinoin or a combination of topical retinoids, benzoyl peroxide, and oral antibiotics. Once treatment goals are met, maintenance therapy most often involves topical retinoid monotherapy.

Benzoyl Peroxide

Benzoyl peroxide is an over-the-counter bactericidal agent. It is available in bar, cream, gel, lotion, pad or wash formulations ranging from 2.5-10% strengths. It is an FDA pregnancy category C agent. Adverse effects associated with benzoyl peroxide's use are dry skin and local erythema. No formulation has been found to be superior. It is used for the treatment of mild to moderate mixed acne in combination with topical retinoids. It is also recommended to be added to regimens including topical or oral antibiotics to reduce the incidence of bacterial resistance.

Global Alliance to Improve Outcomes in Acne Group¹

In July 2009, the Global Alliance to Improve Outcomes in Acne group published a guide on new insights in management of acne. Recognizing the growing issue of antibiotic resistance, the Global Alliance developed a consensus statement on strategies to limit antibiotic resistance during the management of acne. These included the following recommendations:

- Topical antibiotics may be used in mild to moderate acne as long as they are combined with benzoyl peroxide (BPO) and a topical retinoid.
- Use BPO concomitantly as a leave-on or as a wash.
 - BPO reduces the likelihood of antibiotic resistant *P. acnes* emerging and rapidly reduces the number of sensitive and resistant strains of *P. acnes* at the site of application.

- BPO for 5 to 7 days between antibiotic courses may reduce resistant organisms on the skin.
- Avoid using antibiotics (either oral or topical) as monotherapy either for acute treatment or maintenance therapy.
- Avoid the simultaneous use of oral and topical antibiotics without BPO, particularly if chemically different.
- Limit the use of antibiotics to short periods (3 months) and discontinue when there is no further improvement or improvement is only slight
- Avoid the use of antibiotics for maintenance therapy.

If you have any questions regarding this document, please contact the NPTC at nptc1@ihs.gov.

References:

1. Thiboutot D, Goolnick H, Bettoli V, et. al. New insights into the management of acne: an update from the Global Alliance to Improve outcomes in Acne group. *J Am Acad Dermatol*. 2009; 60(5 suppl): S1-S50.