Recent Findings on Bacterial Resistance in Acne Vulgaris

Studies point to new strategies for combating bacterial resistance in the treatment of acne.

Resistance not limited to *P. acnes*. Researchers reviewed studies on the use of antibiotics in acne vulgaris over nearly a 50-year period and found that both correct and incorrect use of antibiotics for acne can promote antimicrobial resistance. Among factors contributing to this resistance are antibiotic monotherapy, long-term administration of antibiotics, and the administration of antibiotics without concurrent benzoyl peroxide and/or topical retinoids. The authors concluded that antibiotics should be prescribed in combination with benzoyl peroxide and/or topical retinoids and be limited to a maximum of several months. (J Drugs Dermatol. 9(6):655-64)

Prescribing habits are changing in response to resistance. Prescribing habits are changing due to resistance concerns, one recent study suggests. Investigators examined the National Ambulatory Medical Care Survey database for acne patients and noted declines in the use of erythromycin and isotretinoin for acne among all physicians, and increases in use of tetracyclines. BPO monotherapy decreased among dermatologists but not other clinicians. Use of BPO/clindamycin combination topical treatments increased among all clinicians. Topical retinoid use increased among dermatologists but appeared to be on the decline among non-dermatologists. (J Drugs Dermatol. 9(5):519-24.)

“Antifungals” may offer new options. According to a new study, antifungal agents may offer an alternative to antibiotics to combat *P. acnes*. Of the five agents tested in vivo against *P. acnes* isolated from patients with acne, miconazole, ketoconazole, and itraconazole showed concentration-dependent anti-*P. acnes* activity, including against antibiotic-resistant isolates, while fluconazole and voriconazole showed no anti-*P. acnes* activity. (Biol Pharm Bull. 33(1):125-7.)

BPO wash alone may not reduce *P. acnes* counts. Benzoyl peroxide (BPO 5.3%) emollient foam may be more effective than BPO (8%) wash in reducing *P. acnes* levels on the back. Twenty patients colonized with *P. acnes* on their backs were treated once daily with BPO foam for two weeks; no treatment in week 3; and BPO wash alone once daily for two more weeks. Results showed that total *P. acnes* counts were reduced by 1.9-log (one week) and 2.1-log (two weeks) with BPO emollient foam, while BP wash did not reduce *P. acnes* counts after two weeks. (J Drugs Dermatol. 9(6):622-5.)

New compounds are in the pipeline. Lauric acid (LA) is among potential agents on the horizon to counter *P. acnes*. A new study found that LA-loaded liposomes (LipoLA) could fuse with the membranes of *P. acnes* and release the carried LA directly into the bacterial membranes, thereby killing the bacteria effectively. Since LA is a natural compound that is the main acid in coconut oil and also resides in human breast milk and liposomes have been successfully and widely applied as a drug delivery vehicle in the clinic, the authors suggested that LipoLA may be a safe and effective medication for acne vulgaris. (Biomaterials. 30(30):6035-40.)