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EDITORIAL

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Vehicle Matters: Triple Combo for Acne Vulgaris

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Although data suggest that antibiotic use by dermatologists is decreasing, our specialty still has the highest rates of oral antibiotic prescribing across all fields of medicine.[1,2] In an era of intense concern about antibiotic resistance, the use of oral antibiotics in dermatology warrants careful consideration. However, the risk for resistance is just one of many potential consequences of systemic antibiotic use.

The negative and potentially prolonged impact of antibiotics on the microbiome is becoming increasingly evident. Research shows that the use of oral antibiotics reduces microbial diversity in the gut and may support an imbalance in microbial communities.[3] Potential consequences of microbiome disruption are numerous and varied, ranging from increased risk for some chronic diseases to associations with certain cancers.[4,5]

Antibiotic use is linked to risk for *Clostridium difficile* infection (CDI)[6] and impaired vaccine response.[7] Additionally, antibiotic use is associated with risk for specific systemic side effects, including antibiotic-induced drug reaction with eosinophilia and systemic symptoms (DRESS) syndrome, Stevens-Johnson syndrome/toxic epidermal necrolysis, and acute generalized exanthematous pustulosis (AGEP), among others.[8,9,10] These and other negative potential consequences of oral antibiotic use are outlined in the pages ahead. Importantly, this review emphasizes that detrimental effects of antibiotic use can develop even with short courses of oral treatment.

For dermatology providers, awareness of these risks should inspire a reassessment of our antibiotic prescribing habits, particularly for acne, one of the diseases for which a significant proportion of oral antibiotics are prescribed. The latest guidelines of care for the management of acne note that use of narrow-spectrum oral antibiotics and the concomitant use of topical antimicrobials like benzoyl peroxide (BPO) and/or retinoids can reduce the risk for antibiotic resistance and decrease dependence on oral agents.[11]

With therapeutic developments in the topical space, it may be increasingly possible to avoid altogether the use of oral antibiotics to manage acne. In fact, a recent systematic review found that the topical triple-agent fixed-dose combination clindamycin phosphate 1.2%/adapalene 0.15%/benzoyl peroxide 3.1% gel was one of the most efficacious and safe treatments for moderate-to-severe acne.[12] A different analysis focused on treatment response within the first four weeks showed that the triple-combination gel yielded greater acne lesion reductions and rates of treatment success than did dyad combinations. Notably, research shows that bacterial cultures repeatedly exposed to the combination of clindamycin and BPO did not develop antibiotic resistance, although exposure to clindamycin alone induced resistance.[13] Therefore, the triple combination formulation can be expected to present little to no risk for antibiotic resistance.

The efficacy of the fixed-dose triple combination is once again evidence that formulation science matters and vehicles matter. The moisturizing gel formulation is indicated for once daily application for the management of acne in patients 12 and older. Providing three active ingredients in a once-daily application supports therapeutic adherence. Plus, the gel formulation is well tolerated.

The availability of a triple combination, fixed-dose topical treatment for moderate-to-severe acne provides clinicians the opportunity to treat acne without relying on oral antibiotics and risking their undesirable side effects. It is well past time for prescribers to reassess their dependence on systemic antibiotics and consider effective alternatives, particularly for acne.

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