A Novel Antibiotic Just for Acne

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Dermatologists consistently rank as the most frequent prescribers of systemic antibiotics, and one of the most common diagnoses for which we recommend these agents is acne vulgaris. Up to three quarters of the antibiotics that dermatologists prescribe are in the tetracycline class.[1] Even though dermatology as a specialty is well-known for off-label prescribing, it may be surprising to note that no systemic antibiotic had been FDA approved solely for treatment of acne—until recently.

The approval last year of sarecycline (Seysara) marked the first time the FDA approved a systemic antibiotic specifically for use in the management of moderate to severe acne and no other conditions. Sarecycline is part of the tetracycline class of antibiotics. However, this novel drug can be differentiated from predecessors in the class. In fact, modification of the chemical structure of sarecycline is thought to account for the drug's targeted activity against *Cutibacterium acnes (C. acnes)*.[2] Additionally, data suggest that sarecycline has a substantially decreased activity against Gram-negative bacteria and hence less effect on the normal human intestinal microbiome.[3] Reduced impact on the normal intestinal flora encourages overall patient health by supporting healthy metabolism, nutrient absorption, and possibly prevention of inflammation in specific cells. Decreased incidence of gut dysbiosis associated with sarecycline may lead to increased tolerability of the drug, relative to older tetracyclines. Doxycycline, for example, has been associated with high rates of new-onset inflammatory bowel disease.[4]

It is exciting to consider the potential long-term clinical benefits we may see by using a systemic tetracycline drug that has targeted activity against *C. acnes* and reduced risk for developing bacterial resistance.[5] As the specialists who prescribe the most antibiotics, dermatologists have been challenged to confront the problem of antibiotic resistance by modifying their approach to acne management over the past two decades. We understand the need to reduce reliance on systemic antibiotics and recognize that adding to the regimen topical antimicrobials, such as benzoyl peroxide and retinoids, can further reduce the risk for developing resistance. While we must continue to adhere to guidelines of care for acne management, and exercise caution by demonstrating good antibiotic stewardship, dermatology providers will be heartened by the knowledge detailed by Dr. Armstrong and Mr. Hekmatjah that sarecycline is less likely to contribute to antibiotic resistance and less likely to impact the gut microbiome.

It should be noted that, despite the potential adverse events and off-target side effects associated with the broad-spectrum activity of tetracycline, doxycycline, and minocycline, they have been used to treat acne in a substantial number of patients over several decades. This history of use is well described in the pages ahead.

Imagine, then, the benefit of having a next-generation drug of the same therapeutic class but with a narrow spectrum of coverage and direct targeting of acne vulgaris.

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