SPOTLIGHT Q/A

Antibiotic Stewardship in Acne: Practical Tips From Dr. Lorraine L. Rosamilia

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Antibiotic resistance can complicate the assessment of treatment failure in patients with acne. *Cutis* board member Lorraine L. Rosamilia, MD, discusses approaches to recognizing potential antibiotic resistance and strategies for judicious antibiotic use while maintaining effective acne management. She also addresses emerging microbiome testing, methods for setting patient expectations, and core stewardship principles for trainees.

What clinical signs suggest antimicrobial resistance is affecting acne treatment response, and how can dermatologists identify them early?

DR. ROSAMILIA: Antibiotic resistance is a difficult phenomenon to define clinically for acne due to many pathogenic contributors, namely the increase in sebum production stoked by hormonal changes, which further provokes *Cutibacterium acnes* biofilms, follicular plugs, and various inflammatory cascades. The sequence and primacy of these steps are enigmatic in each patient, therefore the role and extent of true antimicrobial therapy are debatable. Acne is more complex than other conditions that utilize antimicrobials, such as tinea corporis. In acne, lack of treatment response may be due to various factors, including long-term adherence challenges (such as inconsistent home dosing and trending complex over-the-counter [OTC] regimens), hormonal fluctuation, and confounders such as gram-negative or pityrosporum folliculitis. Therefore, determining if resistant bacteria are "causal" in acne recalcitrance or exacerbation is vague. In older patients (or younger patients with chronic conditions), proof of bacterial resistance from wound, pulmonary, or gastrointestinal studies might be available, but a typical acne patient would not present with these data.

Do you routinely rotate patients off oral antibiotics after a fixed treatment period, or is it symptom based? How do you balance the risk for disease recurrence with resistance concerns?

DR. ROSAMILIA: For my patients, the typical "triple threat" for moderate acne—oral antibiotics, topical benzoyl peroxide, and topical retinoids—still is tried and true. I typically prescribe 6 weeks of low-dose antibiotic therapy (doxycycline 50 mg daily) and arrange a telemedicine visit at 4 to 6 weeks to assess progress and adherence. Subsequently, I might substitute topical for oral antibiotics, with long-term plans to discontinue all antibiotics. In females, I might add spironolactone and/or oral contraceptive pills, and for recalcitrant or progressive acne, I would discuss isotretinoin. If the patient's acne is under good control without antibiotics but they still experience intermittent deeper papules, I consider adding burst therapy of low-dose doxycycline for 1 week as needed, or for instance, during sports seasons. I try to maintain the lowest possible dosage of doxycycline while toeing the line between short-term antibacterial and longer-term anti-inflammatory control. In fact, I typically recommend that patients take it with their morning meal to absorb slightly less than the full 50-mg dosage, mitigate adverse effects, and increase adherence. All of these regimens include a benzoyl peroxide wash for its many anti-acne properties and in the context of this discussion to mitigate *C acnes* on acne-prone skin without creating antibiotic resistance.

Do you see a future for point-of-care microbiome or resistance testing in acne management?

DR. ROSAMILIA: I think we should be receptive to the evolution of these tests, and depending on the patient's insurance coverage, efficient collection methods, and applicability to all patients, we someday may approach antimicrobial pharmacotherapy in a more personalized way. The microbiome is a broad topic with protean approaches to testing and prebiotic/probiotic supplementation, so open-minded but cautious and well-studied utilization is key.

What language do you find effective when setting expectations for acne treatment that avoids overreliance on antibiotics?

DR. ROSAMILIA: I find it important to first determine the patient's prior therapies. Many patients with acne

present to dermatology after taking a full dosage of various antibiotics for broad amounts of time, and they may have experienced acne exacerbation (or at least perception of such) when the refills ran out. Also, I ask them to outline their past and current OTC regimens, which provides context for where and how the patient gets their information and advice. I like providing the patient's next steps in written form, even telling them to tape the instructions to their bathroom mirror. It is just as vital to take time at the first office visit to explain the expected time to improvement and why acne is a multifactorial condition for which antibiotics are only part of the approach with benzoyl peroxide and retinoids.

What are your top practical tips for incoming dermatologists to practice antibiotic stewardship in acne management?

DR. ROSAMILIA: The American Academy of Dermatology (AAD) guidelines recommend 3 to 4 months as the maximum threshold for systemic antibiotics for moderate to severe acne, with tetracyclines having the best evidence for efficacy and safety. The AAD recommends never utilizing these as monotherapy and always including concomitant benzoyl peroxide to avoid bacterial resistance and topicals such as retinoids to provide a bridge to a maintenance phase without antibiotics. Starting there gives trainees structure within which to build their own acne management approach and style for their patient population. Some dermatologists might prescribe middle to high antibiotic dosages at first followed by a taper or initiate low antibiotic dosages with a standard 3- to 4-month follow-up, or a bit of a hybrid of these, as outlined in my approach. As mentioned, standardized testing for resistance to guide our dosing is not mainstream. There are countless ways to apply these guardrails, consider a place for hormonal or future isotretinoin therapy, and include the many varieties of OTC and prescription acne topicals to round out a personalized regimen for each patient based on their schedule, medication intolerances, skin type, fertility plans, and lifestyle.

What's the single most impactful change a busy dermatology clinic could make right now to reduce antibiotic overuse in acne care?

DR. ROSAMILIA: I think telemedicine or in-person check-ins at the 1- or 2-month mark are vital to the assessment of the patient's and/or family's understanding of the treatment schedule, their ability to procure the prescription and OTC products successfully, and their consistency in using them. This is a good opportunity to remind them that our goal is to see true acne improvement; take fewer medications, not more; and create a reality where their acne regimen is intuitive and safe.