

Treatment of severe acne hampered by antibiotic overuse and delays in prescribing more potent medication

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A medical records analysis by researchers at NYU Langone Medical Center concludes that physicians who treat severe acne leave too many patients on ineffective antibiotics for far too long before prescribing more potent needed therapy with the medication isotretinoin, sometimes known by its former brand name Accutane.

"Our study suggests that physicians need to recognize within weeks, not months, when patients are failing to respond to antibiotic therapy in cases of severe acne," says study senior investigator Seth Orlow, MD, PhD, the Samuel Weinberg Professor of pediatric dermatology and chairman of the Ronald O. Perelman Department of Dermatology at NYU Langone. The research team's analysis involved a detailed review of 137 medical histories of patients, all over the age of 12 and treated at NYU Langone for severe cases of the skin condition between 2005 and 2014.

Orlow says the study is the first to focus specifically on the history of [antibiotic overuse](#) in severe cases of acne, which were all eventually treated with isotretinoin. The case reviews, culled from more than 5,000 files of those who sought treatment for mild to severe acne at NYU Langone in the past decade, showed that on average, those with severe, often "cystic" acne were kept on initial antibiotic therapy for 11 months before their physicians recognized that the drugs were not working, and before switching patients to isotretinoin therapy. Beyond the fact that the

antibiotics were not working, the researchers say, the overuse adds to the perils of antibiotic resistance.

The NYU Langone researchers also found that among the 137 patients with [severe acne](#) in their study who eventually received isotretinoin, commonly prescribed as a daily pill, there was a lag of nearly six months on average from the time it was first mentioned by their physician until patients began taking it. Although there were multiple causes for the delays, the researchers report, some were due to the tight controls placed on the drug because of the increased risk it poses for birth defects, and concerns about depression and other potentially serious [side effects](#).

The study findings are described in the *Journal of the American Academy of Dermatology* online Oct. 30. The NYU Langone acne specialists say some form of the potentially skin-scarring condition afflicts most American adolescents. Acne inflammation is primarily caused by the body's immune reaction to the bacterium *Propionibacterium acnes*, with as many as 4 percent of patients experiencing severe symptoms.

According to Orlow, antibiotic therapy can be very effective for inflammatory types of acne. And switching to different antibiotics is routine practice when another antibiotic has failed to reduce symptoms. However, Orlow says clinical guidelines recommend limiting such antibiotic therapy to two months to three months each, or six months overall, unless significant improvements are seen.

"Physicians and patients have become far too complacent about antibiotic overuse and its subsequent danger of increasing microbial drug resistance," says Orlow. The problem, he notes, is compounded by disruptions in patient care from patients changing physicians or health plans. Orlow says a lot of time is wasted while continuing [antibiotic therapy](#) during these intervals when treatment failure is visibly evident.

Lead study investigator and dermatologist Arielle Nagler, MD, says fears about isotretinoin side effects, as well as federal restrictions meant to prevent use of the medication during pregnancy, have also all helped contribute to prolonged antibiotic overuse and delayed access to the drug.

Nagler acknowledges that the risk of side effects is real, but says protocols are in place to prevent or carefully manage them. Among these is the iPledge registry set up by the Food and Drug Administration in 2006, which requires all patients, physicians and pharmacists to track isotretinoin prescriptions and side effects and to monitor compliance by women of child-bearing age with monthly pregnancy tests. She notes, however, that registration delays or technical holdups often keep patients from getting their medications as prescribed by as much as a month.

"Acne remains the number one reason for young people to visit a dermatologist, and there are no other medications as effective as isotretinoin for treating severe cases of the skin condition," says Nagler, an instructor at NYU Langone, which also funded the study. "We need to find a better balance between trying antibiotics that may work and getting isotretinoin quickly to patients for whom antibiotics are not working.

"Physicians also need to start talking to their acne patients earlier about possible isotretinoin therapy, so when and if they do need to switch to it, [patients](#) are more receptive to the drug and any concerns about side effects have already begun to be addressed," says Nagler.

Provided by New York University School of Medicine

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