Medical Xpress

Long-term use of antibiotic to treat acne not associated with increased bacterial resistance

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The prolonged use of tetracycline antibiotics commonly used to treat acne was associated with a reduced prevalence of *Staphylococcu*S. aureus bacteria and was not associated with increased resistance to the tetracycline antibiotics, according to a report posted online today that will appear in the August print issue of *Archives of Dermatology*.

Staphylococcu*S. aureus* is found in both hospital and community settings. "While *S. aureus* colonizes the skin, it can also be responsible for localized cutaneous infections and life-threatening systemic infections," the authors write as background information in the article. "At one time, it was sensitive to many antibiotics and antimicrobial agents. However, because of its ability to adapt to these therapies and become resistant, clinical scenarios now exist in which few therapeutic options remain to treat this organism. Therefore, methicillin-resistant *S. aureus* (MRSA) has become commonplace."

Matthew Fanelli, M.D., and colleagues at the University of Pennsylvania School of Medicine, Philadelphia, conducted a survey study of patients treated for acne to determine the frequency of *S. aureus* colonization and to compare the susceptibility patterns between patients who are using antibiotics and those who are not using antibiotics. A total of 36 of the 83 patients in the study (43 percent) were colonized with *S. aureus*. Two of the 36 patients (6 percent) had MRSA; 20 (56 percent) had *S. aureus* solely in their throats; nine (25 percent) had *S. aureus* solely in their noses; and seven (19 percent) had *S. aureus* in both their noses and throats.

"Long-term use of antibiotics decreased the prevalence of *S. aureus* colonization by nearly 70 percent," the authors report. "A decreased rate of colonization was noted with the use of both oral and topical antibiotics."

"Fewer than 10 percent of the isolates of *S. aureus* were resistant to tetracyclines, the most commonly used antibiotic family to treat acne," they write. "Resistance to erythromycin and clindamycin was mostly prevalent among our isolates and was noted in the patients who did and did not use antibiotics."

The study results contradict current dogma about long-term use of antibiotics.

"Specifically, in our study, the prolonged use of antibiotics from the tetracycline class that are commonly used to treat acne lowered the prevalence of colonization by *S. aureus* and did not increase resistance to the tetracycline antibiotics," the authors conclude. "Future research should be conducted with respect to other organisms and antibiotics."

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