significant therapeutic implications, including prolonged, multidrug immunosuppression.[4] Common and potentially useful features of missed cases include timing of onset, known BP-associated medications, and minimal response to treatment.

Because 78% (32/41) of missed cases occurred within 3 months of drug initiation and 85% (35/41) were associated with 6 drug classes (antibiotics, diuretics, antihypertensives, statins, antacids, and analgesics), this specific time frame and medication history should be elicited. Nonbullous presentations and 2-month diagnostic delays may have contributed to the observed rate of missed cases.

Limitations include our retrospective design and small sample size. Although some missed cases may have been idiopathic with coincidental recent new medications, the substantial proportion of BP cases with overlooked potential triggers suggests that additional research is needed to better define features associated with drug-induced BP to assist dermatologists in minimizing unnecessary immunosuppression in affected patients.

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## The frequency of topical antibiotic use after biopsy and excision procedures among dermatologists and nondermatologists: 2006 through 2015

*To the Editor:* Several studies have documented that topical antibiotics do not reduce the risk of surgical site infection after uncomplicated clean cutaneous surgery compared with petrolatum.[1,2] Although evidence-based recommendations from the Centers for Disease Control and Prevention recommend avoiding topical antibiotic use, nearly half of dermatology wound care handouts advise using topical antibiotics after such procedures.[3,4] However, there is a lack of information regarding actual clinician prescribing practices for topical antibiotics after these procedures and how this has changed over time.

Using the National Ambulatory Medical Care Survey (NAMCS), we investigated the frequency of topical antibiotic use associated with biopsies and excisions between 2006 and 2015. Each encounter that was coded as including a biopsy or excision was evaluated for prescribing of topical antibiotics (ie, mupirocin, gentamicin, neomycin, bacitracin, polymyxin, clindamycin, and erythromycin). Using logistic regression, we evaluated the frequency of topical antibiotic use after clean biopsies and excisions, stratified by specialty (dermatologists versus nondermatologists). To improve accuracy and better characterize temporal trends in antibiotic use, because of the limited number of observations available in NAMCS, the study period was divided into 5 2-year periods, as has been recommended elsewhere.[4]

In 2014/2015, among patients seen by dermatologists, there were an estimated 503,227 (10.2% of visits) and 268,264 (5.7% of visits) topical antibiotic prescriptions each year associated with biopsies and excisions, respectively. Among patients seen by nondermatologists in 2014/2015, there were an estimated 210,536 (1.9% of visits) and 401,684 (5.3% of visits) topical antibiotic prescriptions each year associated with biopsies and excisions, respectively.

During the study period, the odds of receiving a topical antibiotic after a biopsy initially fell among

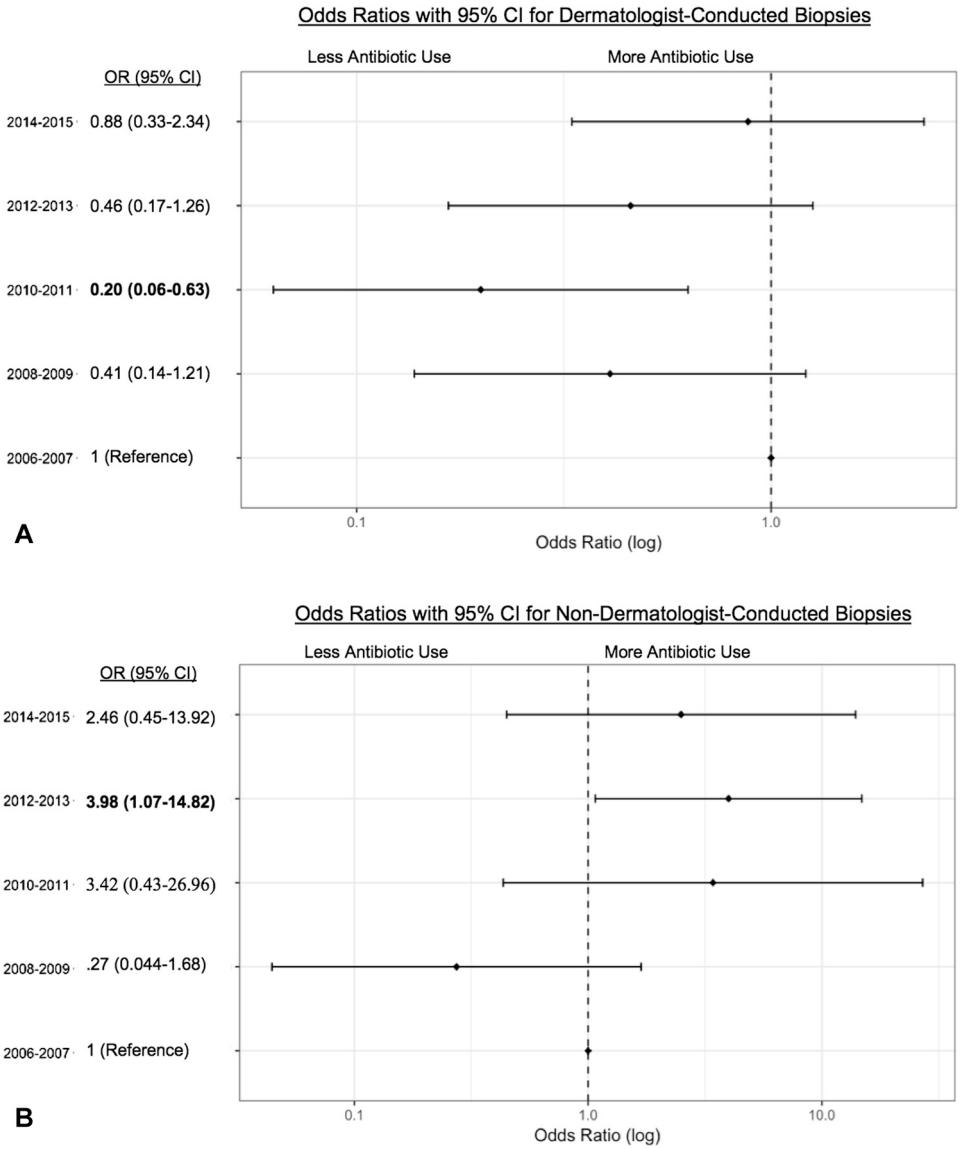


**Fig 1.** Odds of a receiving a topical antibiotic after encounters involving a biopsy by (**A**) dermatologists and (**B**) nondermatologists. 2006/2007 is the reference period. Bold values are statistically significant at $P < .05$. *CI*, Confidence interval; *OR*, odds ratio.

dermatologists, with a nadir in 2010/2011 (odds ratio [OR], 0.20; 95% confidence interval [CI], 0.06-0.63), before increasing back to baseline rates in subsequent years (Fig 1). Among nondermatologists, the odds of receiving a topical antibiotic after biopsy remained largely unchanged, with the exception of 2012/2013 (OR, 3.98; 95% CI, 1.07-14.82).

With respect to excisions, a similar initial decrease and subsequent increase in prescribing was noted among dermatologists, although these changes did not reach statistical significance (Fig 2). Among nondermatologists, the odds of receiving a topical antibiotic after an encounter including an excision significantly increased throughout the study period, peaking in 2014/2015 (OR, 5.16; 95% CI, 1.77-14.99).

This work builds on a prior study investigating the use of topical antibiotics after clean dermatologic procedures between 1993 and 2007, which reported antibiotic use in 5.0% of these procedures.[5] We identified substantially higher rates of antibiotic use after biopsies and excisions, particularly when conducted by dermatologists. Despite high-quality evidence from randomized controlled trials suggesting multiple advantages of using petrolatum over topical antibiotics after clean cutaneous surgery,[2] physicians continue to prescribe topical antibiotics after procedures, with more than 750,000

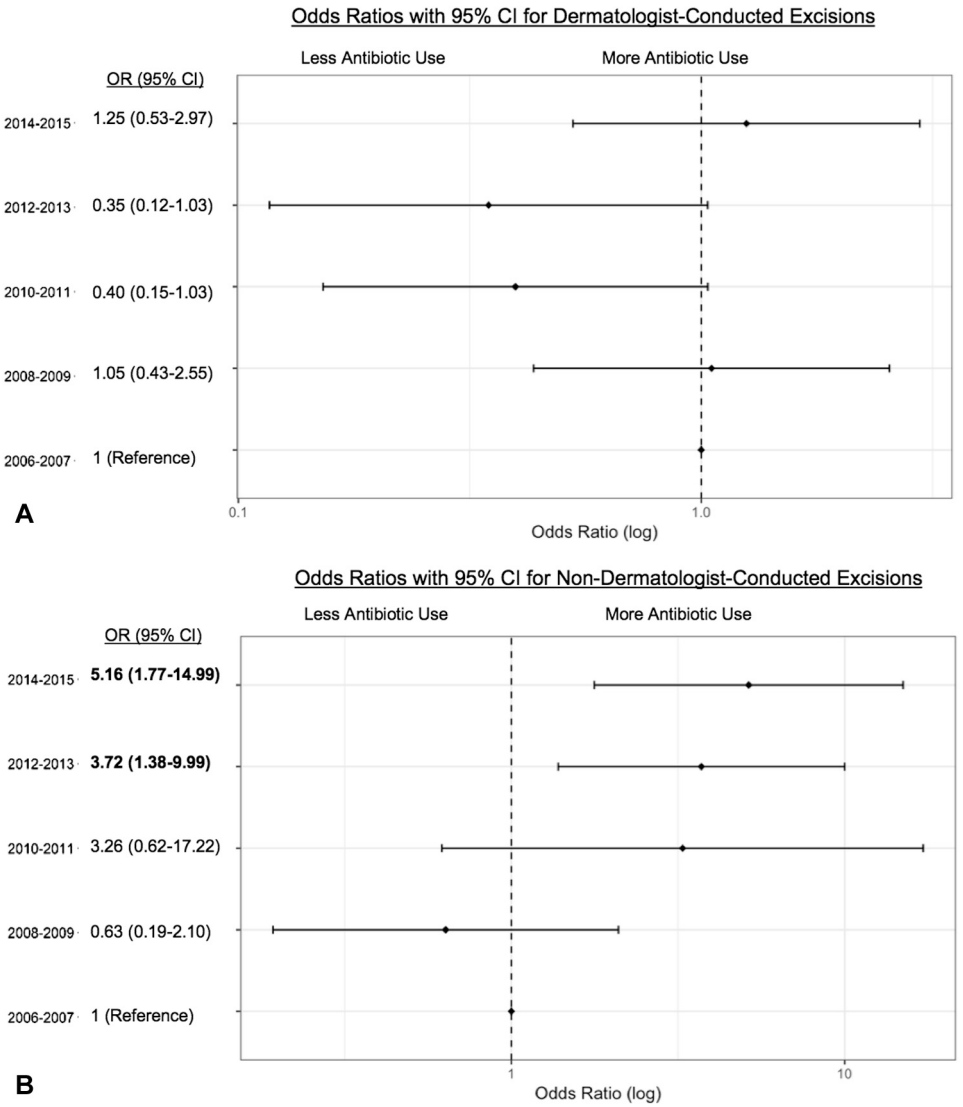


**Fig 2.** Odds of a receiving a topical antibiotic after encounters involving an excision by (**A**) dermatologists and (**B**) nondermatologists. 2006/2007 is the reference period. Bold values are statistically significant at $P < .05$. *CI*, Confidence interval; *OR*, odds ratio.

prescriptions annually by dermatologists alone. In addition, given that data in NAMCS may not capture over-the-counter antibiotic use or samples given in the office, it is likely that total topical antibiotic use frequency is higher than our estimates. Future studies are needed to understand the factors driving this persistent prescribing and to identify how to optimize topical antibiotic use to improve patient outcomes and prevent resistance in the community.

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