

Clinical Communications

Discrepancy in antibiotic prescription for atopic dermatitis exacerbation between ethnic groups

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Clinical Implications

- Antibiotic use for children hospitalized for atopic dermatitis exacerbation is less frequent among Hispanic patients versus non-Hispanics. Future studies are needed to address potential differences in pathophysiology or disparities in atopic dermatitis care between different ethnic groups.

Studies have shown racial and ethnic differences in antibiotic overprescription that are meaningful for improving antibiotic stewardship. Minorities are less likely to receive antibiotics for the same diagnoses. For example, blacks receive less antibiotics for asthma exacerbation compared with whites, and both Hispanics and blacks receive less antibiotics for viral acute respiratory tract infections versus whites.^{1,2} As in asthma and viral respiratory tract infections, the use of antibiotics in atopic dermatitis (AD) exacerbation remains controversial. Although overt skin infections or infectious complications merit antibiotic use,³ there is a lack of evidence in giving antibiotics for AD exacerbation. In this study, we examined the use of antibiotics among ethnic groups with AD exacerbation.

In a previous retrospective inpatient study that spanned over 14 years, we learned that 40% (70 of 174) of pediatric AD

admissions were due solely to AD exacerbation, rather than to infectious complications associated with AD such as cellulitis, skin abscess, bacteremia, or osteomyelitis.⁴ Lack of overt infection in the AD exacerbation group was supported by both clinical and laboratory features including significantly shorter length of stay and lower serum C-reactive protein, as compared with the group with infectious complications. In addition, the frequency of subjects with AD exacerbation who received a systemic antibiotic (80% [56 of 70]) was consistent with that in 2 previous studies.^{5,6} On the basis of our unique patient demographics, which are predominantly Hispanics, we decided to compare the rate of antibiotic prescription for AD exacerbation between ethnic groups. Among the 70 subjects, Hispanics represent 71% of subjects who did not receive antibiotics (10 of 14), whereas 29% of non-Hispanics (4 of 14) did not receive antibiotics. As presented in Table I, Hispanics were significantly less likely to receive antibiotics than non-Hispanics for AD exacerbation ($P = .022$). There was no significant difference in antibiotic prescription rate by age at presentation, sex, language, or parental education. Our current sample size did not have sufficient power to detect a difference across racial groups. Besides, there was no significant difference in pairwise comparison between ethnic and racial groups (eg, Hispanics vs blacks) based on Bonferroni correction (data not shown).

Decreased antibiotic prescription for AD exacerbation among Hispanics is consistent with previous studies in asthma and viral illness showing that racial and ethnic minorities, particularly Hispanics and blacks, are less likely than whites to receive antibiotics. In our cohort, all 9 white patients received antibiotics. This may be concerning because white pediatric patients have been found to receive more unnecessary antibiotics inconsistent with evidenced-based care.² It is not clear why Hispanic children with AD exacerbation received less antibiotics. Unique

TABLE I. Patients' demographic characteristics and antibiotic prescription status for 70 pediatric patients admitted for AD exacerbation

Characteristic	% Patients	% Antibiotic prescribed	P
Total	100% (70 of 70)	80% (56 of 70)	
Sex			.529*
Male	70% (49 of 70)	77.55% (38 of 49)	
Female	30% (21 of 70)	85.71% (18 of 21)	
Ethnicity			.022†
Hispanic	44.29% (31 of 70)	67.74% (21 of 31)	
Non-Hispanic	55.71% (39 of 70)	89.74% (35 of 39)	
Race			.117*
Hispanic	44.29% (31 of 70)	67.74% (21 of 31)	
White	12.86% (9 of 70)	100% (9 of 9)	
Black	18.57% (13 of 70)	92.3% (12 of 13)	
Asian	24.29% (17 of 70)	82.35% (14 of 17)	
Language			.999*
English	84.84% (28 of 33)	85.71% (24 of 28)	
Non-English	15.15% (5 of 33)	80% (4 of 5)	
Parental education			.999*
Less than high school	12.12% (4 of 33)	100% (4 of 4)	
High school and above	87.87% (29 of 33)	82.75% (24 of 29)	

*Fisher exact test.

† χ^2 test.

pathophysiology in each racial group may predispose to varying colonization with different *S aureus* strains and AD severity.^{7,8}

There are few studies that specifically address Hispanic patients with AD.⁹ Our results support a need for further studies of AD in this population. There may also be social or cultural factors such as provider implicit bias and parental expectation that could explain our results. Further studies on these factors may lead to improved antibiotic stewardship in AD. Although all study subjects were documented to have severe AD and been admitted to the hospital, an inherent limitation of our retrospective study was the lack of an objective AD severity measure at presentation. This should be addressed by future larger studies. In conclusion, our study showed that Hispanic children who were hospitalized for AD exacerbation were less likely than non-Hispanic children to receive antibiotics.

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