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Acute and Chronic Spontaneous Urticaria Patients Report Increased Rates of Medication Allergies

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Background

Urticaria is extremely common in clinical practice and is recognized by the presence of wheals with accompanying angioedema. The true pathophysiology of acute and chronic spontaneous urticaria is not completely known, but there are a variety of accepted triggers for urticaria in an acute setting. Alternatively, antibiotic allergies are on the rise and present with similar symptomatology. Based on the similarity of symptoms and relapsing nature of chronic urticaria, some spontaneous urticarial eruptions may be misattributed to transient exposures such as foods or medications.

Research Aim

We sought to determine whether there is an increased reporting of antibiotic allergies in patients diagnosed with acute urticaria or chronic spontaneous urticaria in the community setting.

Methods

Retrospective chart review of 950 patients, from birth to age 50, was completed using the electronic medical records of the Windsor Allergy & Asthma Clinic. Cases were identified to have a history of acute spontaneous urticaria (ASU) or chronic spontaneous urticaria (CSU), whereas controls have an established diagnosis of food allergies, asthma, allergic rhinitis or non-allergic rhinitis. The number of reported medication and antibiotic allergies were compared between the case and control groups using Pearson's chi square analyses.

Results

Patients with a history of urticaria were more likely to report an antibiotic allergy than would be expected by chance when compared to our control group ($p = 0.023$). A total of 42/239 (17.6%) patients with a history of urticaria (acute or chronic) vs 82/711 (12%) of the control group reported one antibiotic allergy. Additionally, 8/239 (3.3%) of our cases (acute or chronic) versus 14/711 (2%) of our control group reported 2 antibiotic allergies (see below). Subgroup analyses looking at whether the nature of urticaria, acute vs. chronic, affected the allergy reporting risk did not find a significant difference. Both groups were more likely to report antibiotic allergies when compared to the control group ($p = 0.036$).

# allergies reported	Case		Control	
	CSU (% of CSU)	ASU (% of ASU)	Control (% of Control)	Total
0	98 (77%)	86 (77%)	608 (86%)	792
1*	23 (18%)	19 (17%)	82 (12%)	124
2*	3 (2%)	5 (5%)	14 (2%)	22
3	1 (0.8%)	0	4 (0.6%)	5
4	1 (0.8%)	2 (1.8%)	3 (0.4%)	6
5	1 (0.8%)	0	0	1
Total	127	112	711	950

Figure 1. Comparing the number of reported allergies in our case group (CSU/ASU) and control group.

Values within the brackets represent the percentage of patients within each group reporting an antibiotic allergy.

* = statistical difference between case and control.

Conclusions

These results raise concern regarding the nature of self-reported antibiotic allergies in patients with a history of urticaria. These "antibiotic allergies" may be a result of concomitant urticarial exacerbations rather than truly IgE mediated mechanisms. This can lead to lifelong reported allergies for patients that can significantly impact quality of life. Additionally, this creates difficult clinical scenarios for clinicians when first line antibiotic agents are unavailable for patients reporting allergies and while needing to balance growing microbial resistance and antibiotic stewardship. Although patients may report an antibiotic as an allergy, there is evidence that many are able to tolerate the agent after formal allergy evaluation¹. Our study highlights the importance of this evaluation within the patient population affected by acute and spontaneous urticaria.

Future Research

Future research could explore whether there are specific antibiotics that are more frequent offenders than others, as well as if this observed trend is also true for other medications beyond the focus of antibiotics. Additionally, a comparison between pediatric and adult populations may highlight age related differences.

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Reference:

1. Abrams, E. M., & Khan, D. A. (2018). Diagnosing and managing drug allergy. *Cmaj*, 190(17), E532–E538.