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Readiness for PENicillin allergy testing: Perception of Allergy Label (PEN-PAL) Survey

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Background

- Although 8-20% of the population is labeled penicillin allergic, >95% will tolerate penicillins after validated testing
- Penicillin allergy labels (PAL) are associated with adverse outcomes, including nosocomial infections, surgical site infections, and increased time to receiving emergent antibiotics
- Patient perception of their own PAL that could impact effectiveness of testing and their likelihood to undergo PA delabeling is unknown

Objectives

- To ascertain beliefs, perceptions, and antibiotic utilization experiences of a current self-reported PA patient population
- To identify potential barriers to PA delabeling.

Methods

Population

18,943 adult patients who have volunteered to receive IRB-approved recruitment emails

Study Design

A single survey was emailed to potential participants with three biweekly reminder emails from October to December 2019

Outcomes

- Differential antibiotic utilization between those reporting penicillin allergy and no penicillin allergy
- Proportion of penicillin allergic who believed their penicillin allergy to be permanent, and who would be interested in and would trust testing results

Analysis

For continuous variables, median and interquartile range were calculated. For categorical variables, Fisher's exact test or Pearson's chi-squared statistic were used. Wilcoxon rank-sum test was used to compare continuous variables (Stata 15.0).

Results

Table 1: Demographics of PEN-PAL Survey Respondents (n=5138)

	No Penicillin Allergy (n=4091)	Current Penicillin Allergy (n=1047)	Removed Penicillin Allergy (n= 146)	P value
Median Age [IQR]	62 [51-70]	61 [51-69]	64 [51-71]	NS
Gender No. (%)				
Male	1599 (39)	275 (26)	45 (31)	<0.005
Female	2464 (60)	769 (73)	99 (68)	
Other	2 (0)	0 (0)	1 (1)	
Declined to answer	26 (1)	3 (0)	1 (1)	
Race No. (%)				
White	3720 (92)	972 (93)	136 (93)	NS
African American	167 (4)	44 (4)	3 (2)	
Other	177 (4)	26 (2)	7 (5)	
Declined to answer	27 (1)	5 (0)	0 (0)	

1047 participants with a self-reported allergy:

- 81% (799/989) believed their penicillin allergy to be permanent
- 80% (813/1016) would take penicillin for an indicated cause if an allergist tested them and found it to be safe
- 55% (561/1024) were interested in a penicillin allergy testing referral but only 61% (639/1035) remembered discussing their penicillin allergy with a primary care provider and only 4% (38/1040) had ever been offered a referral for penicillin allergy testing
- 7% (73/1040) discussed the negative consequences of a penicillin allergy with their provider
- 19% (198/1040) had taken and tolerated a penicillin, but continued to self-report their penicillin allergy

Conclusions

In the largest survey of penicillin allergic patients to date (penicillin allergic n= 1047):

Educational points for patients and providers necessary to upscale penicillin testing programs included:

Most adult penicillin allergic patients:

- 1) Have discussed at some point their penicillin allergy with their primary care provider
 - But didn't discuss the negative consequences of a penicillin allergy
 - Were not offered a referral for penicillin allergy testing
- 2) Believe their penicillin allergy to be permanent
 - But would take penicillin if tested by an allergist and deemed it to be safe and were interested in testing

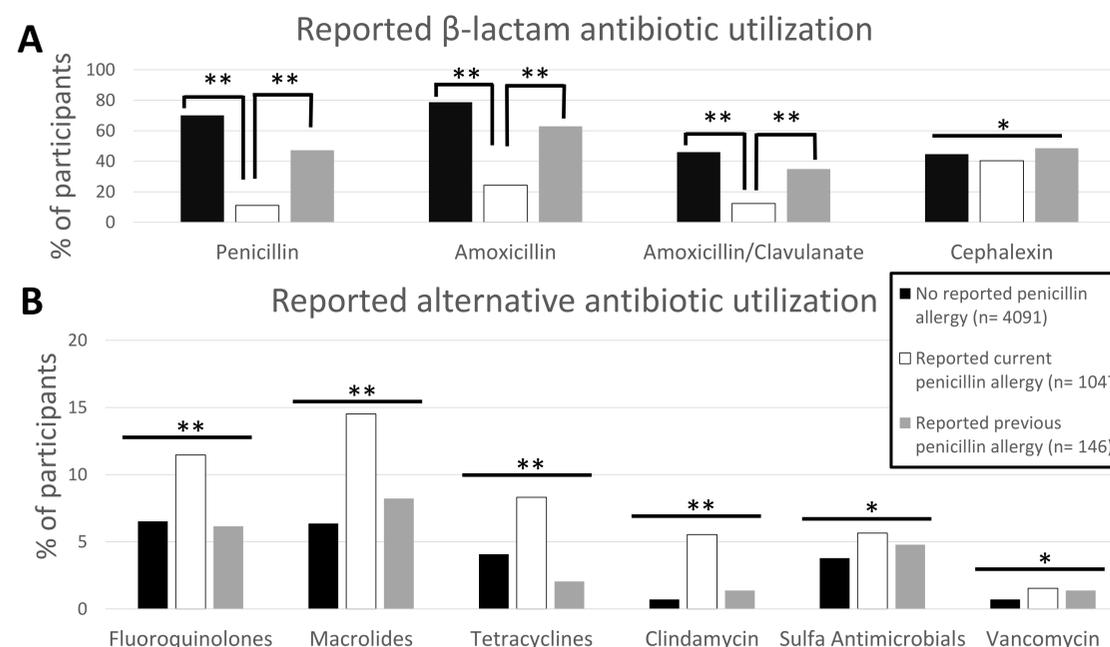
Penicillin allergic patients recalled:

- Having a markedly lower frequency of receiving penicillins (after index reaction), amoxicillin, amoxicillin/clavulanate
- More frequently receiving fluoroquinolones, macrolides, tetracyclines, clindamycin, sulfa antimicrobials, and vancomycin

Delabeled participants recalled:

- More frequently receiving penicillin (after index reaction), amoxicillin, and amoxicillin/clavulanate compared to penicillin allergic participants

Figure 1: Reported antibiotic utilization, by penicillin allergy status.



A) Participants reporting a current PA less frequently reported utilization of penicillin** (after index reaction, when applicable), amoxicillin**, amoxicillin/clavulanate**, and cephalexin*. **B)** Participants reporting a current PA more frequently reported utilization of fluoroquinolones**, macrolides**, tetracyclines**, clindamycin**, sulfa antimicrobials*, and vancomycin* (* $P < 0.05$, ** $P < 0.005$, no bar=NS).