



Inflammatory Bowel Disease Patients with Reported Penicillin Allergies are at Increased Risk of Infections and Hospital Visits

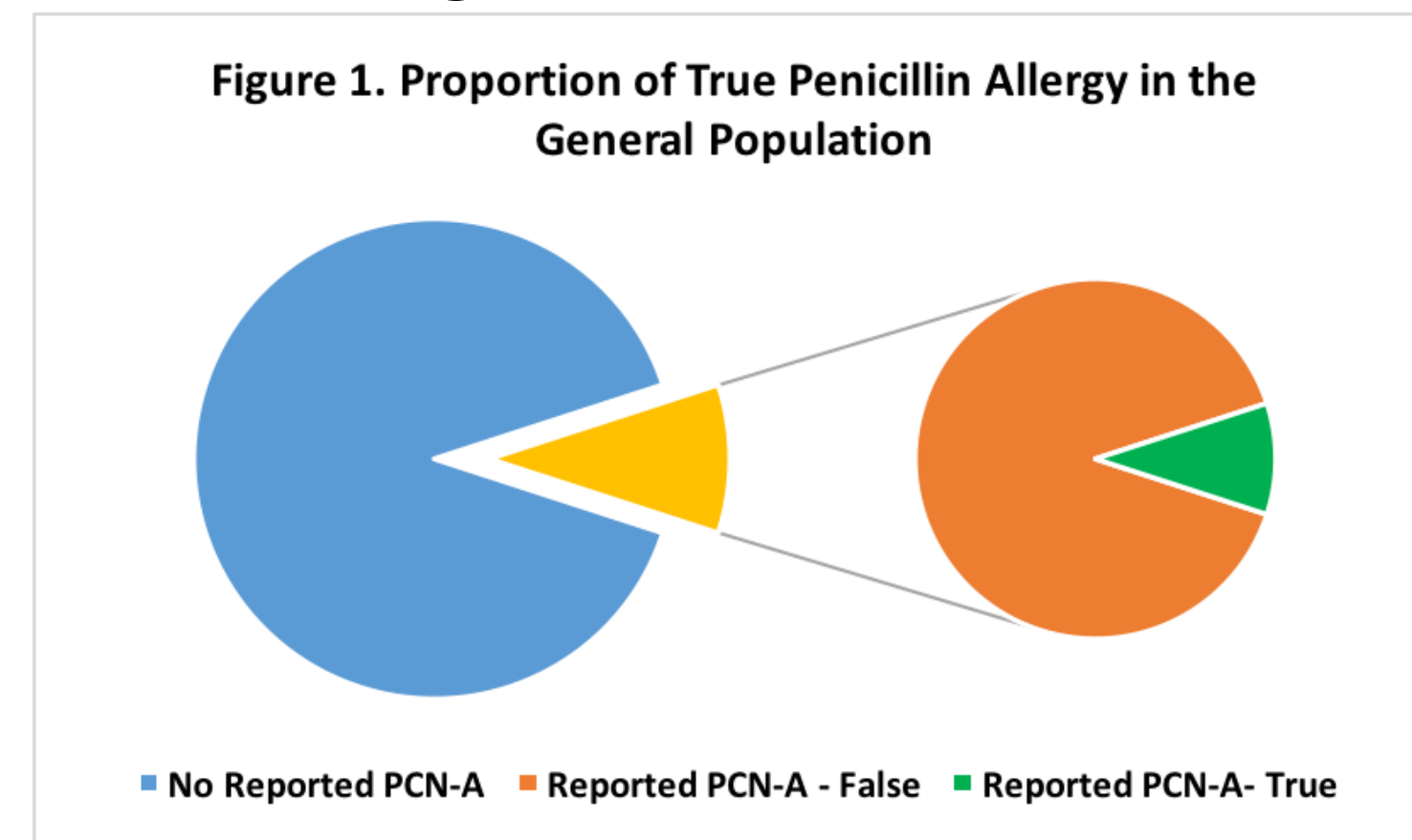
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BACKGROUND

- Penicillin-based allergies are charted for up to 10-15% of the population.
- About 90% of these allergies are not true allergies (Figure 1).
- Patients in the general population labeled with a penicillin-allergy (PCN-A) have been associated with an increased risk of MRSA and *C. difficile* infection (CDI) partly due to alternative antibiotic selection.
- Patients with inflammatory bowel disease (IBD) specifically have been noted to have higher rates of CDI infection as well.



AIMS

The aim of this study was to assess infection and hospitalization risk in IBD patients who were labeled with a penicillin allergy.

METHODS

- TriNetX, a multi-institutional, global health research network database, was queried using ICD10 codes to obtain data on patients diagnosed with IBD and labeled with PCA-A from 2002-2022.
- Separate analyses were run for Crohn's disease and ulcerative colitis, and each further divided into 2 cohorts: those with PCN-A and those without PCN-A.
- ICD10 codes were used for the following: Crohn's disease, Ulcerative colitis, MRSA infection, and CDI.
- CPT codes were used for identifying bowel surgery.
- Other variables of interest included biologic therapy, ER visits, and number of inpatient admissions.
- Propensity score matching was used and included current age, gender, race, PPI use, and glucocorticoid use.

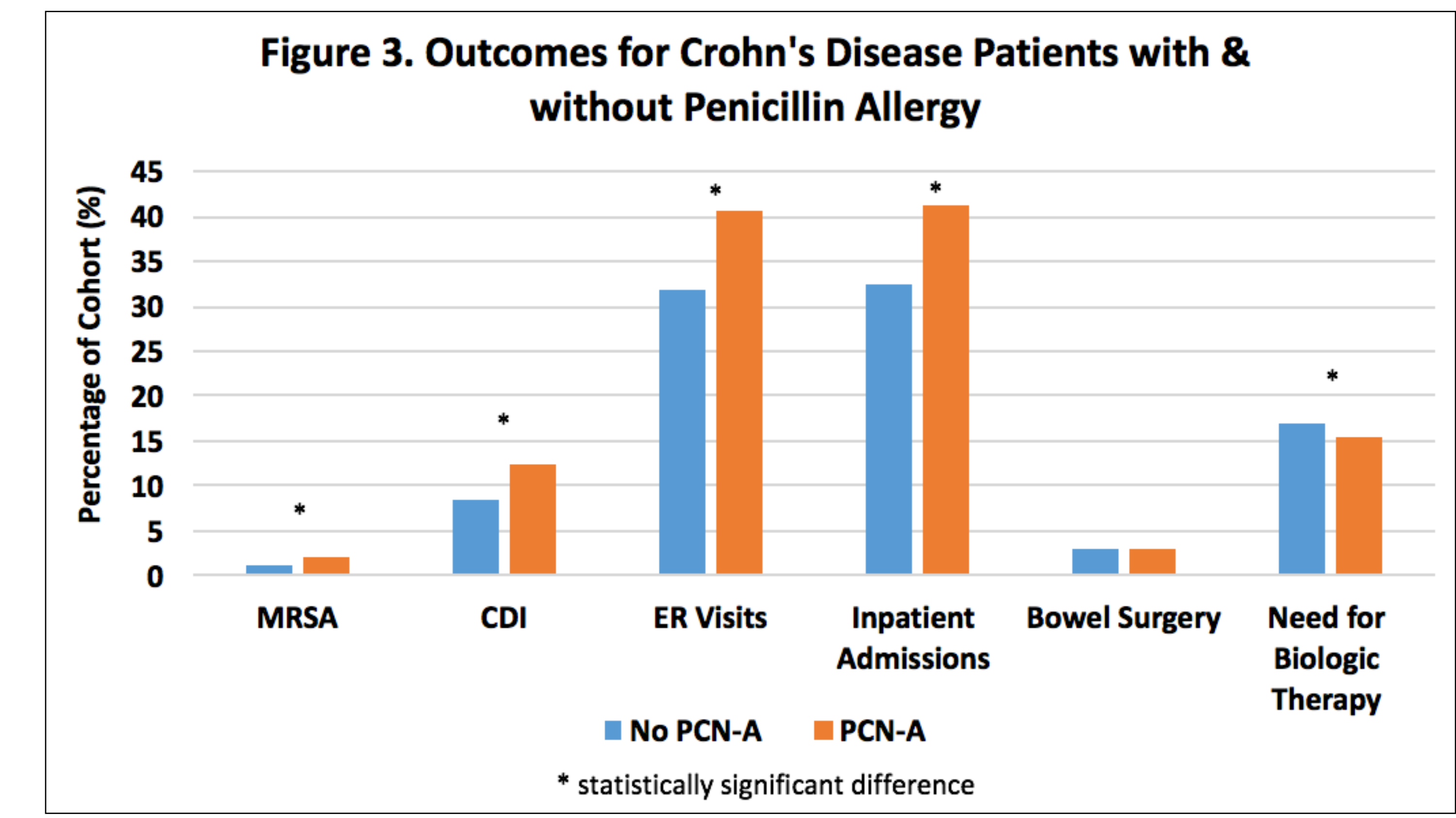
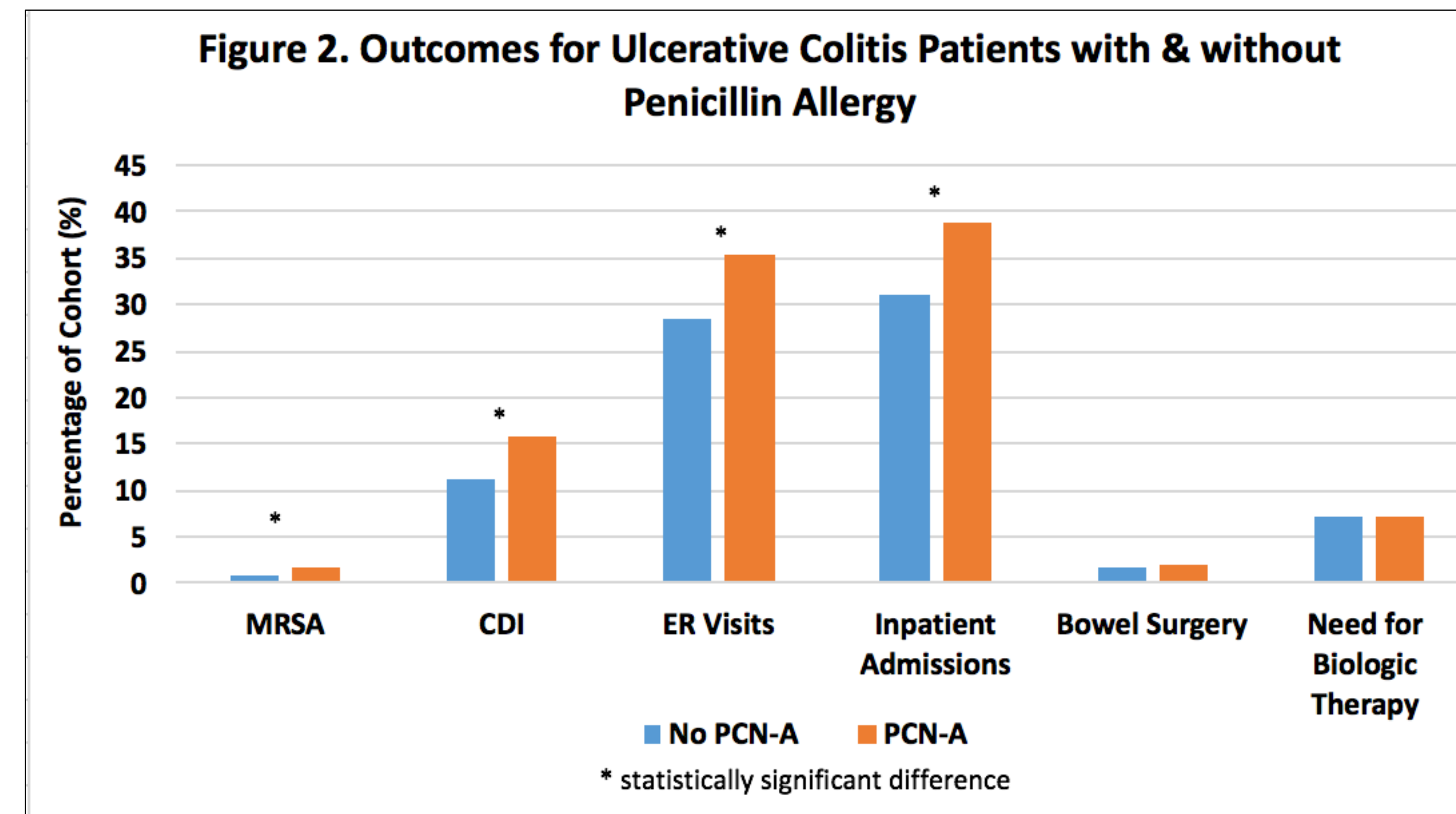
RESULTS

Table 1. Outcomes for Ulcerative Colitis Patients Labeled with Penicillin Allergy

Outcomes	Odds Ratio	95% CI	p
CDI	1.51	(1.37,1.66)	p<0.0001
MRSA Infection	1.81	(1.34, 2.46)	p<0.0001
Bowel Surgery	1.19	(0.93,1.52)	p = 0.17
Biologic Therapy	1.0	(0.89,1.14)	p = 0.87
ER Visits	1.38	(1.28,1.47)	p<0.0001
Admissions	1.40	(1.31,1.50)	p<0.0001

Table 2. Outcomes for Crohn's Disease Patients Labeled with Penicillin Allergy

Outcomes	Odds Ratio	95% CI	p
CDI	1.53	(1.38,1.69)	p<0.0001
MRSA Infection	1.76	(1.38,2.2)	p<0.0001
Bowel Surgery	0.92	(0.77,1.09)	p = 0.33
Biologic Therapy	0.90	(0.83,0.98)	p = 0.01
ER Visits	1.47	(1.38,1.57)	p<0.0001
Admissions	1.45	(1.36,1.54)	p<0.0001



CONCLUSIONS

- Patients with IBD and reported PCN-A have increased risk for CDI and MRSA along with ER visits and admissions, in turn increasing hospitalization costs and length of stay.
- There was no statistically significant association with reported PCN-A in IBD patients and needing intestinal surgery.
- Crohn's disease patients with PCN-A were less likely to receive biologic therapy.
- The difference between side effect and true allergy should clearly be explained to patients to avoid mislabeling.
- More studies are needed to determine the effects of PCN-A in IBD patients (i.e. other types of infections, number of flares).
- Allergy testing should be considered in this subgroup of patients as it may increase risk for infections.