Direct Oral Challenge for Low-Risk Sulfonamide Allergy: Safety and Antimicrobial Stewardship Impacts in Hospitalised Patients

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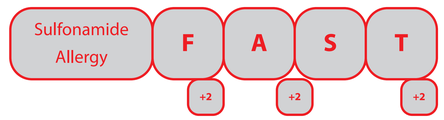
Rationale and Aim

- Sulfonamide antibiotic allergy labels affect 2% of the population and impact antimicrobial prescribing. Trimethoprim/sulfamethoxazole (TMP-SMX) direct oral challenge (DOC) in non-severe sulfonamide allergy is safe and efficacious (1,2).
- In this prospective cohort study, we sought to evaluate the safety and antimicrobial prescribing impacts of TMP-SMX DOC for low-risk sulfonamide allergy in hospitalised patients.

Methods

- Adult inpatients with a sulfonamide, 'sulfa' or TMP-SMX allergy were evaluated during a pharmacist-led antimicrobial stewardship allergy ward round at a tertiary referral health service in Melbourne, Australia.
- Patients with a low-risk phenotype (3) or SULF-FAST score < 3 (4) were offered a **single-dose** TMP-SMX DOC.



F: < 5 years; A: Anaphylaxis or angioedema, S: SCAR; T: treatment

SULF-FAST < 3, NPV 95.5%

(95% CI, 91.4%-98.1%)

Figure 1: SULF-FAST Clinical Decision Rule (4)

In hospitalised patients with a low-risk sulfonamide allergy, trimethoprim-sulfamethoxazole DOC is safe and improves antimicrobial prescribing in patients requiring trimethoprim-sulfamethoxazole directed or prophylactic therapy.

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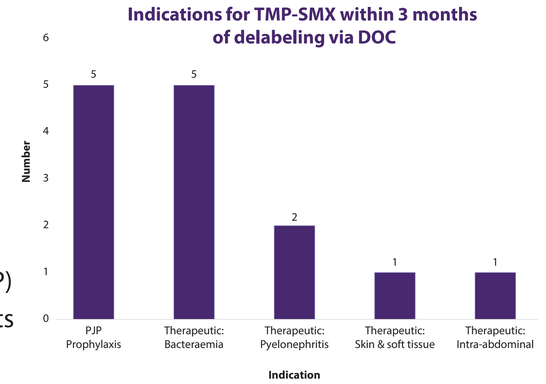
Results

March 2022 - December 2023:

- **53** inpatients underwent TMP-SMX DOC
  - **16 (30%)** SULF-FAST = 0
  - **32 (61%)** SULF-FAST = 1
  - **5 (9%)** SULF-FAST = N/A
- Median Age: 60 years (IQR: 60, 79)
- **30 (57%)** female; **23 (43%)** male
- **53 (100%) negative DOC and were delabeled**

Phenotype		Prevalence (n= 53)
Non-severe cutaneous reaction > 10 years ago	37 (70%)	
Unknown Reaction > 5 years ago	11 (21%)	
Non-immune reaction, requested delabeling via DOC	5 (9%)	

- **14 (26%)** patients were prescribed TMP-SMX within three months of delabeling via DOC
- **9 (64%)** directed therapy based on microbiological culture result
  - Median duration **8.5 days** (IQR; 6.5, 11)
- **5 (36%)** *Pneumocystis jiroveci* pneumonia (PJP) prophylaxis for immunocompromised patients
- **0 (0%)** patients were relabeled within three months of DOC



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References:
1. Krantz et al JACI IP. Feb 2020
2. Rose et al. JACI IP. Oct 2021
3. Devchand et al. JACI-IP. March 2019
4. Waldron et al. JAMA Netw Open Jun 2023