

Celecoxib allergies and cross-reactivity

A 65-year-old woman was transferred from a regional hospital with hypotension, pulmonary oedema and generalized urticarial rash after commencement of celecoxib. Her medical history included hypertension and polymyalgia rheumatica. Ten years previously, she had developed a generalized urticarial rash after taking a sulfonamide antibiotic. In 1993 she had a similar reaction to penicillin.

Four days before admission to our hospital, she had taken 200 mg of celecoxib for backache and 1 hour later had developed a localized pruritic rash. The rash improved slightly and she took a second dose 3 days later. Within an hour, she developed a diffuse pruritic maculopapular rash involving face, trunk and limbs, swelling of the lips and tongue and a fever, for which she presented to the regional hospital. She was treated with hydrocortisone and promethazine and discharged, but soon afterwards she lost consciousness, became hypotensive and was returned to the Emergency Department. She was treated with i.v. fluids, hydrocortisone, prednisolone and adrenaline. She was then transferred to our hospital.

On arrival, she was febrile and tachycardic, but normotensive and saturating well on 4-L supplemental O₂. She was talking in sentences, and there was a generalized urticarial rash. Auscultation of the chest showed widespread wheeze with bibasal crackles and she had marked pedal oedema. She was given i.v. frusemide and was gradually weaned off oxygen.

Investigations showed increased creatinine (195 µmol/L), thrombocytopenia (platelets of 112, reaching a nadir of $31 \times 10^9/L$) and abnormal liver function tests. Subsequently, neutropenia was also noted (reaching a nadir of $0.4 \times 10^9/L$ 5 days after her second dose of celecoxib). Her rash settled slowly over 5 days and her liver function tests and renal function and haematology slowly returned to normal.

This case illustrates the effect of a severe allergic reaction to a non-antimicrobial sulfonamide medication in someone with a sulfonamide allergy. Celecoxib, a non-antimicrobial sulfonamide, triggered this reaction, and other sulfa-containing medications, such as frusemide, may have exacerbated the symptoms.

The Product Information for Celebrex¹ (Pfizer, New York, NY, USA) states that a sulfonamide allergy is a contraindication to use, but there is little pharmacological evidence of allergies to celecoxib (and other non-antimicrobial sulfonamides) cross-reacting with antimicrobial sulfonamides.²⁻⁴ Instead, most analyses have shown that the incidence of celecoxib reactions in people who are allergic to sulfonamides is comparable to the incidence of reactions that they get from taking placebos or other medications.³

Yet, patients with a history of allergy to a sulfonamide antibiotic may have a greater risk of having an allergic reaction to sulfonamide non-antibiotic drugs, as illustrated by our patient. This risk may not be related to cross-sensitivity, but may instead be due to a predisposition to multiple allergic reactions, including to non-sulfonamides such as penicillins.⁴ The patient of our study had multiple drug allergies (including allergy to penicillin).

In conclusion, the chance of cross-reactivity between sulfonamide antimicrobials and non-sulfonamide

Table 1 Some sulfonamide drugs used in Australia

Non-antibiotics	Antibiotics
Acetazolamide	Sulfamethoxazole
Bendrofluazide	Sulfadiazine
Bumetanide	Sulfacetamide
Celecoxib	Sulfadoxine
Chlorothiazide	
Chlorthalidone	
Dapsone	
Frusemide	
Gliclazide	
Glimepiride	
Glipizide	
Hydrochlorthiazide	
Indapamide	
Probenicid	
Sulfasalazine	
Tolbutamide	

antimicrobials is small but real. Prescribers should be aware of the potential for reactions to any new medications in anyone with multiple drug allergies, including allergy to sulfonamides. A list of some sulfonamide drugs used in Australia can be found in Table 1.

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