

## MEDICATION SAFETY ALERT

### ALLERGIES TO SULFONAMIDE ANTIBIOTICS AND CROSS-REACTIVITIES

#### KEY MESSAGES

- Allergies and hypersensitivity issues are commonly seen with sulfonamide antibiotics. Sulfonamide antibiotics are chemically distinct from other sulfonamides because they contain an arylamine group. This arylamine group is known to be associated with the allergies and hypersensitivity.
- Many other drugs can be classified as sulfonamides but do not contain the arylamine group (non- arylamine sulfonamides).
- Cross-reactivity between arylamine sulfonamides is likely and use of all arylamine sulfonamides should be avoided in patients with a history of allergy or hypersensitivity to any arylamine sulfonamide.
- Evidence suggests no cross-reactivity between arylamine sulfonamides and non- arylamine sulfonamides. Non- arylamine sulfonamides may be used with caution in patients with a history of allergy or hypersensitivity to arylamine sulfonamides.
- Use of the term "sulfa or sulfur allergy" is imprecise and should be avoided.

#### ACTION REQUIRED BY HEALTH SERVICES

Health services should ensure that:

- The term "sulfur (sulphur, sulpha, sulfa) allergy" is not used. Where possible, the name/names of the drug should be recorded. (*Where this is not known the indication for which the drug was prescribed may be useful*).
- Clinical staff have an understanding of common drugs that have a sulfonamide component and the relative cross-reactivities.
- The process for recording a history of Adverse Drug Reactions is followed (see WAMSG alert - Recording a history of Adverse Drug Reactions).

#### BACKGROUND

A recent Western Australian incident highlights the need for clarification about sulfur related adverse drug reactions and the approach to managing patients with a known history or allergy to a sulfur compound.

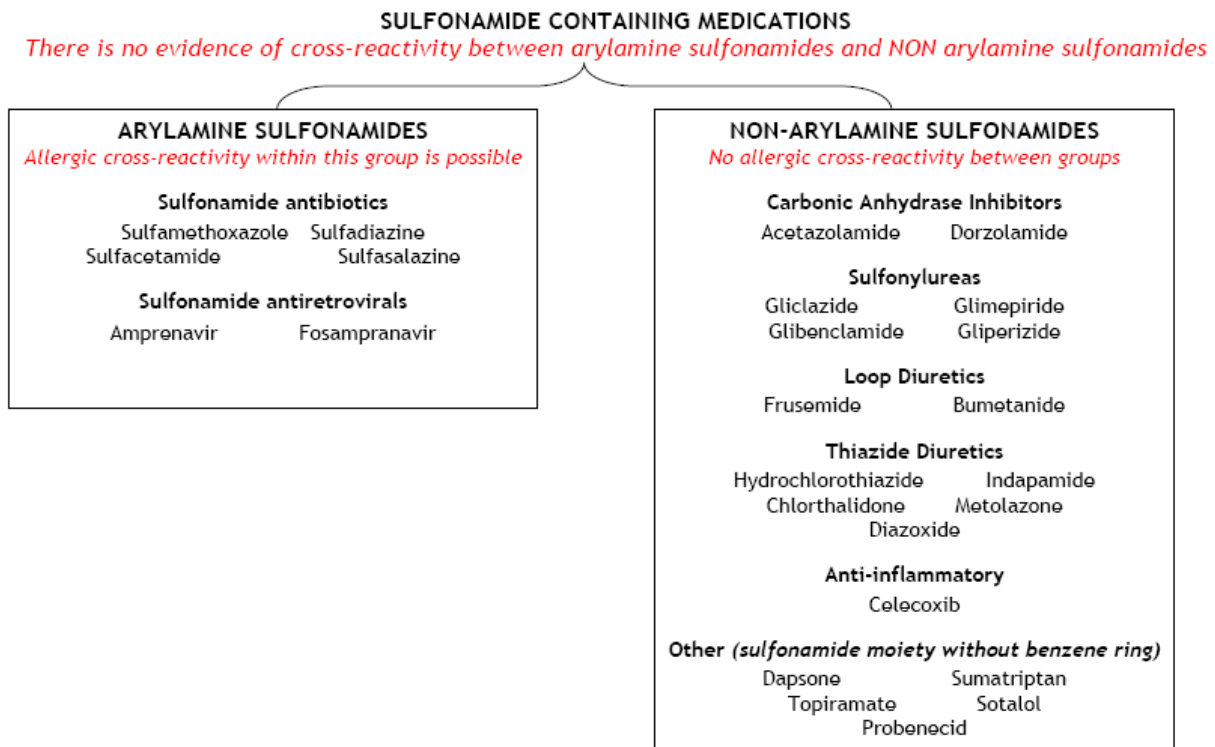
In response to this event confusion regarding sulfur containing drugs, and the risk of cross-reactivity, was identified as problems.

#### SULFONAMIDE CONTAINING DRUGS

Sulfur is found in drugs and preservatives in various forms including sulfites, sulfates, sulfhydryls and sulfonamides. Sulfonamide drugs are further differentiated into the those with an arylamine group (sulfonarylaminines) and those without. The sulfonarylaminines are almost exclusively sulfonamide antibiotics.

Sulfonamides antibiotics are among the most frequent causes of adverse drug reactions. The hypersensitivity is known to be associated with arylamine moiety. Therefore no cross-reactivity would be expected between sulfonamide antibiotics (sulfonarylaminines) and other non-arylamine sulfonamides. While a small number of cases of possible cross-reactivity have been reported, these appear due to allergic susceptibility of the patient rather than a true cross-reactivity. Therefore non-antibiotic sulfonamide drugs are generally not considered as contraindicated in those with a history of hypersensitivity to antibiotic sulfonamides (sulfonarylaminines). Because of this, and the variety of sulfur containing drugs, use of the term "sulfur or sulfa allergy" is imprecise and should be avoided.

The need to precisely describe “allergies” is highlighted in the case of combined preparations. For example, a common antibiotic used in Australia is the combination of the sulfonamide antibiotic sulfamethoxazole and trimethoprim. When hypersensitivity to this preparation occurs, the sensitivity may be to sulfamethoxazole or trimethoprim or both. In this case both sulfamethoxazole and trimethoprim should be documented.



#### IMPORTANCE OF A HISTORY OF TRUE SULFONAMIDE ALLERGY

Patients with a history of life threatening sensitivity to sulfonamide antibiotics are at increased risk of risk of hypersensitivity reactions to agents from other drug classes. Therefore caution is indicated when introducing any new agent in management of these patients. The management of patients with a known sensitivity to sulfonamide antibiotics should take into account the certainty and severity of the initial adverse reaction and available alternative treatment options. See WAMSG Alert “Recording a history of Adverse Drug Reactions”.

#### FURTHER READING

WAMSG Medication Safety Alert: RECORDING OF PREVIOUS ADVERSE DRUG REACTIONS ([link](#))

Smith, W. B. (2008). "Sulfur allergy' label is misleading." *Aust Prescr* 31(1): 8-10.

Dibbern, D. A., Jr., A. Montanaro, et al. (2008). "Allergies to sulfonamide antibiotics and sulfur-containing drugs." *Annals of Allergy, Asthma, & Immunology* 100(2): 91-100; quiz 100-3.

Ponka, D. and D. Ponka (2006). "Approach to managing patients with sulfa allergy: use of antibiotic and nonantibiotic sulfonamides." *Canadian Family Physician* 52(11): 1434-8.

Johnson K, Green D, Rife JP and Limon L. (2005) Sulfonamide Cross-Reactivity: Fact of Fiction? *The Annals of Pharmacotherapy* 39(Feb):290-301.

#### FURTHER INFORMATION

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