ALLERGY SOCIETY
ALLSA
OF SOUTH AFRICA

Information Sheet

DRUG ALLERGY

Adverse reactions to drugs may result from a number of causes. These may be related to the usual pharmacological properties of the drug, to drug over-dosage, to intolerance to the drug, or due to a true allergy against the drug.

An **ALLERGY** is an adverse reaction to a drug, which is mediated by immune mechanisms, usually via the IgE antibody (Type 1 Drug Allergy). Allergic reactions typically occur at low concentrations of the drug and occur rapidly after administration of the drug. Typical features of a Type 1 drug allergy include a diffuse itchy red, urticarial rash, bronchospasm, and swelling of the throat and face. An allergic reaction to a drug may progress on to Anaphylaxis, a shock-like state in which the blood pressure is also lowered and the patient loses consciousness (Table 1).

TABLE 1:
DRUGS CAUSING ANAPHYLACTIC REACTIONS

Allergen extracts
Vaccines
Hormones, e.g. Insulin
Heparin
Radio contrast dyes
Aminoglycosides
Non-steroidal anti-inflammatory drugs
Penicillins
Cephalosporins
Sulphonamides
Tetracyclines
Vancomycin
Muscle relaxants
Opiates
Barbiturates

Immune reactions to drugs may also be delayed, occurring a day or two after exposure. These are mediated by cellular mechanisms, or other, non-IgE antibodies. These usually present with more persistent maculo-papular (flat) rashes, fever, joint pain and swollen glands. Non IgE maculo-papular rashes typically occur following ampicillin administration.

Some drugs cause an allergic eczematous contact dermatitis. This typically occurs as an occupational hazard in individuals who manufacture or dispense drugs. Some drugs may also cause contact dermatitis when used therapeutically on the skin (Table 2).

TABLE 2:
DRUGS CAUSING ALLERGIC CONTACT DERMATITIS

Ampicillin
Benzalkonium Chloride
Local anaesthetics
Penicillin
Formaldehyde
Streptomycin
Benzocaine
Glucocorticoids
Lanolin
Neomycin
Parabens
Paramino benzoic acid
Sulphonamides
Thiomersal

Other drugs cause skin reactions when the skin is exposed to ultra violet light during the time when the patient is taking the drug. These reactions may be activated by “sunburn” wave lengths (285 - 310 nm), or by the longer wave lengths (320 - 450 nm) which cause photo allergic reactions (Table 3).

TABLE 3:
DRUGS CAUSING RASHES IN SUN-EXPOSED AREAS

Azithromycin
Carbamazepine
Doxycycline
Griseofulsin
Nalidixic acid
Phenothiazines
Psoralens
Sulphonamides
Tetracycline
Thiazide Diuretics

TABLE 4:
OTHER AGENTS IN MEDICATIONS WHICH MAY CAUSE ADVERSE REACTIONS

Sodium Sulphite
Sodium Benzoate
Erythrosine
Tartrazine
Yellow dyes
Maize starch
Gelatin

Adverse reactions to medications may also result from a preservative, stabilizer or colouring agent associated with the drug, such as in the drug tablet (Table 4). Aspirin and other salicylates typically cause adverse reactions such as bronchospasm, angioedema and urticaria in sensitive individuals. Such individuals are also sensitive to other non-steroidal anti-inflammatory drugs (Table 5).

TABLE 5:
DRUGS SHOWING CROSS-SENSIVITY WITH ASPIRIN

Diclofenac
Indomethacin
Fenoprofen
Ibuprofen
Naproxen
Mefenamic acid
Phenyl butazone
Paracetamol

INVESTIGATION OF DRUG ALLERGY

The diagnosis of a drug allergy is usually made from the history of typical clinical features occurring after exposure to the drug.

a) Skin Prick Tests

Skin tests are very reliable for the confirmation of allergy to penicillin, toxoids, insulin, egg protein vaccines, latex, and muscle relaxants. Skin Prick Tests should only be carefully performed by specialists in emergency room settings.

LABORATORY TESTS

1. The ImmunoCAP® RAST Test may be performed to confirm the presence of IgE antibodies to Penicillin, Insulin, Alcuronium, Suxamethonium, Amoxycillin, Thiopentone, Protamine and some of the Cephalosporins and several other drugs. CAP RAST tests for drugs may not be positive in all sensitive individuals and a specialist interpretation is usually necessary.
2. The C.A.S.T. Test is a new test that measures the sensitivity of the patient's cells to a drug or preservative or colourant, in the laboratory. This test may also detect non-IgE sensitivity.
3. The Tryptase Test is useful when an anaphylactic reaction occurs during anaesthesia. It confirms that the mast cells have been activated and points to an allergic cause of the reaction.

WHAT TO DO IF YOU HAVE A DRUG ALLERGY

1. Inform your medical doctor and your family.
2. Wear a Medic-Alert bracelet.
3. Take great care that you do not inadvertently receive the drug. Be careful to check the name of the active ingredient when you receive a generic tablet.
4. Study the labels on over the counter medicines that you may take.
5. Avoid all other drugs that are in the same chemical grouping as the drug to which you are allergic. You should obtain a detailed list of these from your doctor, or from the local DRUG INFORMATION CENTRE, or your pharmacist.
6. Always inform your anaesthetist should you require surgery.

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See the ALLSA Internet site at
http://www.allergysa.org

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