Anaphylaxis

Anaphylaxis is the most severe form of an allergic reaction. It is an acute, systemic type 1 hypersensitivity reaction. This reaction is a medical emergency, and without prompt medical intervention, the casualty's condition can quickly deteriorate to even respiratory arrest or death. It is caused when a casualty is exposed to a substance that they are severely allergic to – this substance is known as an allergen.

Type 1 hypersensitivity involves preferential production of IgE in response to certain allergens which activates mast cells causing a rapid release of chemical mediators of inflammation (such as histamine and serotonin). IgE stands for Immunoglobulin E, and is a protein commonly produces by white blood cells during allergic reactions. This type of response occurs within minutes of exposure to the allergen and subsequent antigenic stimulation.

Hypersensitivity to a substance can be caused by a variety of reasons. Hypersensitivity to foods or additives can be due to a nutritional deficiency, for example researchers have found that people with a hypersensitivity to MSG were no longer sensitive once supplemented with vitamin B. Exposure to cigarette smoke in early childhood is a risk factor for developing hypersensitivities. Research has also found that exclusive breastfeeding during the first 4-6 months of a child's life will substantially reduce the risk of hypersensitivity.

It is worthwhile noting that intolerance to a certain food is not an allergic reaction – for example, some people may experience diarrhoea or abdominal pain from dairy products, chocolate, food additives or certain meats. They may also experience allergic-type reactions such as rapid breathing, tightness in the chest or throat, breathing problems or even a rash. It may be difficult to differentiate between intolerance and an allergy, so medical diagnosis should be sought for clarification – an allergen can be diagnosed with a skin-prick test or blood (RAST) test.

There are no specific risk factors that will identify an individual as being hypersensitive to certain common allergens. Generally the only way to identify such an allergen is by exposure to it – such as a severe reaction to peanuts when first introduced. It is estimated that up to 3% of the population are hypersensitive to some form of allergen. Recent statistics place Australia as having an anaphylaxis rate of approximately 1 in 500 to 1 in 5000 per year – similar to that of the United States and United Kingdom.