

WORLD DISEASE DAY FOCUS

Diagnosis & Management of Anaphylaxis



Prof Chng Hiok Hee, Senior Consultant
Department of Rheumatology, Allergy and Immunology, Tan Tock Seng Hospital

Anaphylaxis is defined as a serious allergic reaction that is rapid in onset and may cause death. Anaphylaxis is uncommon but reported to be increasing. Most anaphylactic reactions are triggered by an immunologic mechanism involving IgE although other mechanisms are possible. Common allergenic triggers worldwide include foods, medications, and insect stings. In our study from the TTSH Clinical Immunology and Allergy Service (largely adult patients), the main causes are foods (45%), insect stings (33%) and idiopathic (22%).

As anaphylaxis occurs mainly in the community settings, it is important that family physicians are equipped to recognise and treat anaphylaxis promptly and appropriately. Anaphylaxis is often under-diagnosed and under-treated partly due to a failure to recognise anaphylaxis presenting without obvious cutaneous symptoms or hypotension. The diagnosis of anaphylaxis is clinical and based on a detailed description of the acute episode including preceding activities. The number of symptoms can vary from a few to many involving virtually all body systems. The most common signs and symptoms of anaphylaxis are shown in **Figure 1**. There are three criteria for the diagnosis of anaphylaxis (reference: J Allergy Clin Immunol 2006; 117: 391) each reflecting a different clinical presentation. A raised serum or plasma total tryptase level supports a diagnosis of anaphylaxis and should ideally be obtained within three hours of symptom onset. Serial measurements increase its sensitivity and specificity.

The severity of symptoms can vary from mild and self-limited to fatal within minutes. Asthma and cardiovascular disease are the most important risk factors for a poor outcome from anaphylaxis. Concurrent use of certain drugs (beta-adrenergic blockers, angiotensin-converting enzyme inhibitors, angiotensin II receptor blockers) may affect the patient's ability to respond to both treatment and compensatory physiologic responses. Death

from anaphylaxis is usually due to asphyxiation (upper airway angioedema) or respiratory failure from bronchial obstruction, and less commonly cardiovascular collapse. Biphasic reactions, defined as a recurrence of symptoms that develop following the apparent resolution of the initial anaphylactic event, may occur in one to 20 per cent of anaphylactic reactions. They typically occur within eight hours after resolution of the initial symptoms. Thus, patients with anaphylaxis should be observed for several hours, and if severe reactions, preferably in the hospital for at least 24 hours.

Immediate assessment and treatment are critical in anaphylaxis, as death can occur rapidly (**Figure 2**). The aim is early recognition and treatment to prevent progression to life-threatening symptoms, including shock. Adrenaline is the treatment of choice and intramuscular route is preferred to subcutaneous route. Case series report that the delay in adrenaline use appears to be associated with a worse outcome. There are no absolute contraindications to adrenaline in anaphylaxis because the risk of death or serious disability usually outweighs other concerns. Physicians must not depend on much less effective medications, such as anti-histamines and glucocorticoids to treat anaphylaxis. Antihistamines relieve itch and urticaria but not upper or lower airway obstruction, gastrointestinal symptoms or shock. Glucocorticoids, probably not helpful in the treatment of acute anaphylaxis, are sometimes given empirically with the rationale that they may help to prevent the biphasic or protracted reactions that may occur.

Since many patients may experience recurrent episodes of anaphylaxis, it is important to identify the triggering agent and educate on reducing the risk of a recurrence. All patients should receive an anaphylaxis emergency action plan, an epinephrine auto-injector(s) (trained on how and when to use), and a referral to the allergist for further evaluation.

(continue on page 2)

