

ANAPHYLAXIS

Definition

Anaphylaxis is a systemic allergic reaction which involves the respiratory and/or cardiovascular systems. Food allergy is the most common cause of anaphylaxis in children.

Table 1. Diagnostic criteria for Anaphylaxis

Anaphylaxis is highly likely when any one of the following criteria are fulfilled:

1. Acute onset (within minutes to hours) with involvement of skin, mucosal tissue or both **AND** at least one of the following:
 - respiratory compromise e.g. dyspnoea, stridor, bronchospasm
 - reduced BP or associated end organ dysfunction e.g. hypotonia, syncope
2. Two or more of the following that occur rapidly after allergen exposure (within minutes to hours):
 - skin and mucosal involvement
 - respiratory compromise
 - reduced blood pressure or associated symptoms
 - persistent gastrointestinal symptoms e.g. abdominal cramps, vomiting
3. Reduced blood pressure (BP) after known allergen exposure
(*Infants and children: low systolic BP (age specific) or >30% decrease in systolic BP*)

Management

Treatment of the acute episodes

- first line treatment: IM Adrenaline 0.01mg/kg given every 5-15 minutes as necessary (maximum dose 0.5 mg 1:1000 concentration)
 - injection into lateral aspect of thigh achieves higher and faster peak levels.
 - in severe hypotension refractory to fluid support, start intravenous infusion of adrenaline at 0.1 microgram /kg/min.
 - If patient is on β -blockers, the effect of adrenaline may be blocked. In these patients administer iv glucagon 20-30 μ g/kg, max 1 mg over 5 mins followed by i infusion at 5-15 μ g/min.
- place patient in supine position.
- intravenous fluid resuscitation at 20ml/kg for cardiovascular support.
- airway support and oxygen
- inhaled β_2 agonist may be a useful adjunct to relieve bronchospasm
- antihistamine and corticosteroids:
(*there is lack of agreement on their use in acute treatment*)
 - antihistamine is useful for pruritus and urticaria but is unable to relieve shock and other symptoms.
 - steroids has a slow onset of action.

Continue observation for 6 – 24 hours depending on the severity of reaction because of the risk of biphasic reaction and the wearing off of adrenaline dose.

Discharge planning

- all patients who had experienced an anaphylactic reaction should receive advice about trigger avoidance (if known) and follow up appointment.
- an adrenaline auto-injector should be prescribed as severe reactions are followed by a subsequent severe reaction in about 71% of subjects.
- an auto injector may be considered if there is a history of systemic allergic reaction without anaphylaxis AND one of the following risk factors for fatal anaphylaxis e.g. poorly controlled asthma, peanut/tree nut allergy and remote location.
- education on recognition of signs and treatment and how to use the auto-injector should be given supported by a personalised anaphylaxis action plan.

Long term management and risk minimisation

- prevention of future episodes by avoiding triggers. However, accidental exposures may occur.
- education of patients and their carers in recognition and treatment
- management of co-morbidities that increases the risks associated with anaphylaxis

Figure 1. Algorithm for the approach to a child with anaphylaxis

