



Lindsey Lodge Hospice and Healthcare

# **MANAGEMENT OF ANAPHYLAXIS GUIDELINES**



# CONTENTS

<b>SECTION NUMBER</b>	<b>SECTION TITLE</b>	<b>PAGE NO</b>
<b>1</b>	<b>Definition</b>	<b>3</b>
<b>2</b>	<b>Incidence</b>	<b>3</b>
<b>3</b>	<b>Triggers</b>	<b>3</b>
<b>4</b>	<b>Mortality</b>	<b>3</b>
<b>5</b>	<b>Risk of Recurrence</b>	<b>3</b>
<b>6</b>	<b>Time course for fatal anaphylactic reactions</b>	<b>4</b>
<b>7</b>	<b>Recognition of Anaphylaxis</b>	<b>4-6</b>
<b>8</b>	<b>Sudden onset and rapid progression of symptoms</b>	<b>6-7</b>
<b>9</b>	<b>Aftercare</b>	<b>7</b>
	<b>References</b>	<b>7</b>
	<b>Appendix A</b>	<b>8</b>

## 1. Definition

Anaphylaxis is a severe, life-threatening, generalised or systemic hypersensitivity reaction.

## 2. Incidence

One of the problems is that anaphylaxis is not always recognised, so certain UK studies may underestimate the incidence. Also, as the criteria for inclusion vary in different studies and countries, a picture has to be built up from different sources.

## 3. Triggers

Anaphylaxis can be triggered by any of a very broad range of triggers, but those most commonly identified include food, drugs and venom. The relative importance of these varies very considerably with age, with food being particularly important in children and medicinal products being much more common triggers in older people. Virtually any food or class of drug can be implicated, although the classes of foods and drugs responsible for the majority of reactions are well described. Of foods, nuts are the most common cause; muscle relaxants, antibiotics, NSAIDs and aspirin are the most commonly implicated drugs. It is important to note that, in many cases, no cause can be identified. A significant number of cases of anaphylaxis are idiopathic (non-IgE mediated).

## 4. Mortality

The overall prognosis of anaphylaxis is good, with a case fatality ratio of less than 1% reported in most population-based studies. Risk of death is, however, increased in those with pre-existing asthma, particularly if the asthma is poorly controlled or in those asthmatics who fail to use, or delay treatment with, adrenaline. There are approximately 20 anaphylaxis deaths reported each year in the UK, although this may be a substantial under-estimate.

## 5. Risk of recurrence

The risk of an individual suffering recurrent anaphylactic reaction appears to be quite substantial, being estimated at approximately 1 in 12 per year.



## 6. Time course for fatal anaphylactic reactions

When anaphylaxis is fatal, death usually occurs very soon after contact with the trigger. From a case-series,

- fatal food reactions cause respiratory arrest typically after 30–35 minutes;
- insect stings cause collapse from shock after 10–15 minutes;
- deaths caused by intravenous medication occur most commonly within 5mins.

Death never occurred more than six hours after contact with the trigger

## 7. Recognition of Anaphylaxis

A diagnosis of anaphylactic reaction is likely if a patient who is exposed to a trigger (allergen) develops a sudden illness (usually within minutes of exposure) with rapidly progressing skin changes and life-threatening airway and/or breathing and/or circulation problems. The reaction is usually unexpected.

Anaphylaxis is likely when all of the following 3 criteria are met:

- a. Sudden onset and rapid progression of symptoms**
- b. Life-threatening Airway and/or Breathing and/or Circulation problems**
- c. Skin and/or mucosal changes (flushing, urticaria, angioedema)**

The following supports the diagnosis:

- Exposure to a known allergen for the patient

Remember:

- Skin or mucosal changes alone are not a sign of an anaphylactic reaction
- Skin and mucosal changes can be subtle or absent in up to 20% of reactions (some patients can have only a decrease in blood pressure, i.e., a Circulation problem)
- There can also be gastrointestinal symptoms (e.g. vomiting, abdominal pain, incontinence)

### a. Sudden onset and rapid progression of symptoms

The patient will feel and look unwell.

Most reactions occur over several minutes. Rarely, reactions may be slower in onset.

The time of onset of an anaphylactic reaction depends on the type of trigger. An intravenous trigger will cause a more rapid onset of reaction than stings which, in turn, tend to cause a more rapid onset than orally ingested triggers

The patient is usually anxious and can experience a “sense of impending doom”.

**b. Life-threatening Airway and/or Breathing and/or Circulation problems**

Patients can have either an A or B or C problem or any combination. Use the ABCDE approach to recognise these.

***Airway problems:***

- Airway swelling, e.g., throat and tongue swelling (pharyngeal/laryngeal oedema). The patient has difficulty in breathing and swallowing and feels that the throat is closing up.
- Hoarse voice.
- Stridor – this is a high-pitched inspiratory noise caused by upper airway obstruction.

***Breathing problems:***

- Shortness of breath – increased respiratory rate.
- Wheeze.
- Patient becoming tired.
- Confusion caused by hypoxia.
- Cyanosis (appears blue) – this is usually a late sign.
- Respiratory arrest.

***Circulation problems:***

- Signs of shock – pale, clammy.
- Increased pulse rate (tachycardia).
- Low blood pressure (hypotension) – feeling faint (dizziness), collapse.
- Decreased conscious level or loss of consciousness.
- Anaphylaxis can cause myocardial ischaemia and electrocardiograph (ECG) changes even in individuals with normal coronary arteries.
- Cardiac arrest.

**c. Skin and/or mucosal changes (flushing, urticaria, angioedema)**

They are often the first feature and present in over 80% of anaphylactic reactions.

- They can be subtle or dramatic.

- There may be just skin, just mucosal, or both skin and mucosal changes.
- There may be erythema – a patchy, or generalised, red rash.
- There may be urticaria (also called hives, nettle rash, weal's or welts), which can appear anywhere on the body. The weal's may be pale, pink or red, and may look like nettle stings. They can be different shapes and sizes, and are often surrounded by a red flare. They are usually itchy.

Angioedema is similar to urticaria but involves swelling of deeper tissues, most commonly in the eyelids and lips, and sometimes in the mouth and throat.

Although skin changes can be worrying or distressing for patients and those treating them, skin changes without life-threatening airway, breathing or circulation problems do not signify an anaphylactic reaction. Reassuringly, most patients who have skin changes caused by allergy do not go on to develop an anaphylactic reaction.

## 8. Management of Anaphylaxis

Remember ABCDE for management of emergency:

- If patient conscious, they may prefer to sit upright to breath. For those with low blood pressure, lying flat with legs elevated may be helpful.
- If patient is unconscious, place them in the recovery position.
- Supplementary high flow oxygen should be commenced
- Remove the trigger, if this is possible
- Administer adrenaline intramuscularly. The hospice emergency trolleys have auto-injectors that deliver 0.5mg Adrenaline (0.5ml of 1:1000). The best site is the anterolateral aspect of the middle third of the thigh.

### *Instructions for use of auto-injector:*

- Remove the safety cap on base of auto-injector
  - Swing and jab the tip firmly into the outer thigh. Hold in place for 10 seconds.
  - Remove the auto-injector and massage site for 10 seconds.
- Ring for Paramedic and notify doctor
  - IV fluid challenge 500-1000ml.
  - Slow IV chlorphenamine 10mg and IV hydrocortisone 200mg
  - Repeat adrenaline at 5 minute intervals if there is no response
  - Commence CPR if cardiac arrest occurs – even where there is a valid DNACPR form, it would be acceptable to commence CPR in the event of an acute reversible situation such as anaphylaxis.

The patient will need to be transferred to hospital for observation over 24 hours.



## ANAPHYLAXIS GUIDELINES

For some patients in a hospice, transfer to hospital may not seem the most appropriate course of action and the plan of care may need to be discussed with the patient (if conscious) and /or family/carers.

### 9. Aftercare

An attempt should be made to identify the trigger and ensure the patient is aware to avoid this, ensuring the allergy section of case notes/GP records is updated.

A referral to an allergy specialist is advised.

Patients may be assessed for their own adrenaline to be prescribed for home use. Please note that auto-injectors of adrenaline that are given for patient's self-use are dosed at 0.15mg or 0.3mg which is different to the dose delivered by auto-injectors for healthcare providers treating anaphylaxis reaction.

<b>REFERENCES:</b> Resuscitation Council (UK); Emergency Treatment of anaphylactic reactions 2008 <b>Lead Author:</b> Dr Lucy Adcock <b>Date of Ratification by QA sub Committee:</b> 19 <sup>th</sup> October 2017 <b>Review frequency:</b> 2 years				
To Be reviewed	Review completed	By	Approved By	Circulation
Oct 2019	Sept 19	LA	QA Committee	
Oct 2021	Oct 21	LA	QA Sub-committee	L: Policies, Procedures & Guidelines
Oct 2023				

Appendix A



GUIDELINES  
2021

## Anaphylaxis

**Anaphylaxis?**

**A** = Airway   **B** = Breathing   **C** = Circulation   **D** = Disability   **E** = Exposure

**Diagnosis – look for:**

- Sudden onset of Airway and/or Breathing and/or Circulation problems<sup>1</sup>
- And usually skin changes (e.g. itchy rash)

**Call for HELP**  
Call resuscitation team or ambulance

• Remove trigger if possible (e.g. stop any infusion)

• Lie patient flat (with or without legs elevated)

- A sitting position may make breathing easier
- If pregnant, lie on left side



Inject at **anterolateral aspect** – middle third of the thigh



**Give intramuscular (IM) adrenaline<sup>2</sup>**

- Establish airway
- Give high flow oxygen
- Apply monitoring: pulse oximetry, ECG, blood pressure

**If no response:**

- Repeat IM adrenaline after 5 minutes
- IV fluid bolus<sup>3</sup>

**If no improvement in Breathing or Circulation problems<sup>1</sup> despite TWO doses of IM adrenaline:**

- Confirm resuscitation team or ambulance has been called
- Follow REFRACTORY ANAPHYLAXIS ALGORITHM

**1. Life-threatening problems**

**Airway**  
Hoarse voice, stridor

**Breathing**  
↑work of breathing, wheeze, fatigue, cyanosis, SpO<sub>2</sub> <94%

**Circulation**  
Low blood pressure, signs of shock, confusion, reduced consciousness

**2. Intramuscular (IM) adrenaline**  
Use adrenaline at 1 mg/mL (1:1000) concentration

**Adult and child >12 years:** 500 micrograms IM (0.5 mL)

**Child 6–12 years:** 300 micrograms IM (0.3 mL)

**Child 6 months to 6 years:** 150 micrograms IM (0.15 mL)

**Child <6 months:** 100–150 micrograms IM (0.1–0.15 mL)

The above doses are for IM injection only. Intravenous adrenaline for anaphylaxis to be given only by experienced specialists in an appropriate setting.

**3. IV fluid challenge**  
Use crystalloid

**Adults:** 500–1000 mL

**Children:** 10 mL/kg