beat anaphylaxis

# Anaphylaxis Guideline 2024

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

It is characterised by rapidly developing, life-threatening problems involving:

- **AIRWAY** (pharyngeal or laryngeal oedema)
- and/or **BREATHING** (bronchospasm with tachypnea and/or wheeze)
- and/or **CIRCULATION** (hypotension and/or tachycardia)

Other features may include looking pale and floppy, or shocked with a loss of consciousness. Anaphylaxis has an acute onset, with the patient looking and feeling unwell. They may also have a feeling of 'impending doom'. Skin and/or mucosal changes (flushing, urticaria, angioedema) are often present – but these may be absent in up to 20% of cases[7].

## Differential diagnosis:

Try to rule out severe asthma and septic shock at presentation.

## Emergency Management of Anaphylaxis:

Please refer to **RCUK 2021 - Anaphylaxis Algorithms** (*Figure 1.0*) at the end of this guideline.

Summary of changes to pathways:

- Greater emphasis on early intramuscular (IM) adrenaline to treat anaphylaxis, and repeated doses every 5 minutes if no improvement in Airway/Breathing/Circulation symptoms/signs, along with an IV fluid bolus with the second IM adrenaline administration
- Increased emphasis on the importance of avoiding sudden changes in posture and maintaining a supine position (or semi-recumbent position if that makes breathing easier for the patient) during treatment

- Treatment of refractory anaphylaxis, defined as anaphylaxis where there is no improvement in respiratory or cardiovascular symptoms despite two appropriate doses of IM adrenaline should be treated with IV adrenaline infusion (see *Figure 2.0*)
- **Antihistamines** are now considered a third-line intervention and should not be used to treat Airway/Breathing/Circulation problems during initial emergency treatment
- Corticosteroids (e.g. hydrocortisone) are no longer advised for the routine emergency treatment of anaphylaxis

## Investigations:

### Mast cell tryptase

This test should be considered in the following instances:

| When? | Timings |
|---|---|
| Unclear diagnosis of anaphylaxis | 1) 30 min– do not delay resuscitation to take sample |
| No trigger identified | 2) Second sample at 30 minutes - 2 hours after the start of symptoms |
| Drug trigger | 3) Third sample (base line), either at 24 hours, or in a follow- up allergy clinic |
| Venom trigger | |
| Use immunology bottle check your Trusts' specific sample bottle requirements for this | Record the timing of each sample accurately, on the sample bottle and lab request – i.e. state the time of onset of the reaction and symptoms |

Use FLOWCHART LINK at BeatAnaphylaxis.co.uk for quick reference, but remember our lab uses the tubes shown above!



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## Admission:

All children or young person with anaphylaxis should be observed at least 6-hours. A senior clinician (APNP/Registrar/Consultant) should review the patient after 6 hours and decide if discharge is appropriate.

Admission for 12-24-hours observation should be considered if any of the following circumstances apply:

- If >1 dose of adrenaline was administered
- If an IV fluid bolus was required or cardiovascular instability was present
- If there was inadequate response to treatment
- If rebound anaphylaxis occurred or there is a history of bisphasic reaction in the past
- If the child or young person lives a long distance from medical services

## Patient discharge and follow up:

Make sure that the documentation tool (see **'Discharge Proforma & Checklist'** document) is printed, fully completed, sent for scanning to DocStore on CareFlow, and then filed in the clinical notes

Before discharge:

1. Please use the "Risk Assessment for Adrenaline Auto-Injector" guidance on BeatAnaphylaxis to decide if an adrenaline auto-injector is indicated. The vast majority of patients who have suffered anaphylaxis require this as part of the rescue allergy medications. These patients should be discharged with **at least two Adrenaline Autoinjectors** (**AAIs**) → **No patient leaves** the hospital without two AAIs in their hands.
2. All patients diagnosed with anaphylaxis should be issued with a written BSACI/RCPCH management plan (two **COLOUR COPIES**) - click this **LINK** and access via BeatAnaphylaxis.co.uk. Face-to-face training on how to use the specific adrenaline auto-injector must be provided to the patient/family prior to discharge (JEXT/Epipen trainer pen packs available from nursing staff on PPOD).
3. **Antihistamines are not recommended** as part of the initial emergency treatment for anaphylaxis. Once stabilised, use a non-sedating oral antihistamine (e.g. cetirizine) in preference to chlorphenamine which causes sedation. This should also be prescribed at discharge as part of the personalised allergy action plan to be given for 2-3 days. Recommended doses are provided below:

| Age | Dose of oral cetirizine |
|---|---|
| < 2 years | 250 micrograms/kg |
| 2–6 years | 2.5–5 mg |
| 6–11 years | 5–10 mg |
| 12+ years | 10–20 mg |

4. **Oral steroids** following anaphylaxis are not indicated in the vast majority cases (*except* when a current exacerbation of asthma may have contributed to the severity of the anaphylaxis reaction).
5. **Sign-post** parents/carers/patients to BeatAnaphylaxis.co.uk - 'Patient & Families' website resources at discharge using either the URL (www.beatanaphylaxis.co.uk) or QR Code below:

6. **Follow up must be arranged** when discharging from the Emergency Department/Paediatric ward:
   - NEW patients, not currently under allergy follow-up locally → use referral template from BeatAnaphylaxis.co.uk at discharge to make the internal referral to the paediatric allergy team
   - If child is Out Of Area (visiting family) → use referral template from BeatAnaphylaxis.co.uk upon discharge to their local allergy service via the GP
   - If child is already under an allergy consultant then please email details of the admission to this clinician
7. Anaphylaxis reactions should be reported to the UK Anaphylaxis Registry at www.anaphylaxie.net (to register, email anaphylaxis.registry@ic.ac.uk).

*Figure 1.0 - Resuscitation Council Anaphylaxis Management Algorithm 2021[7]*

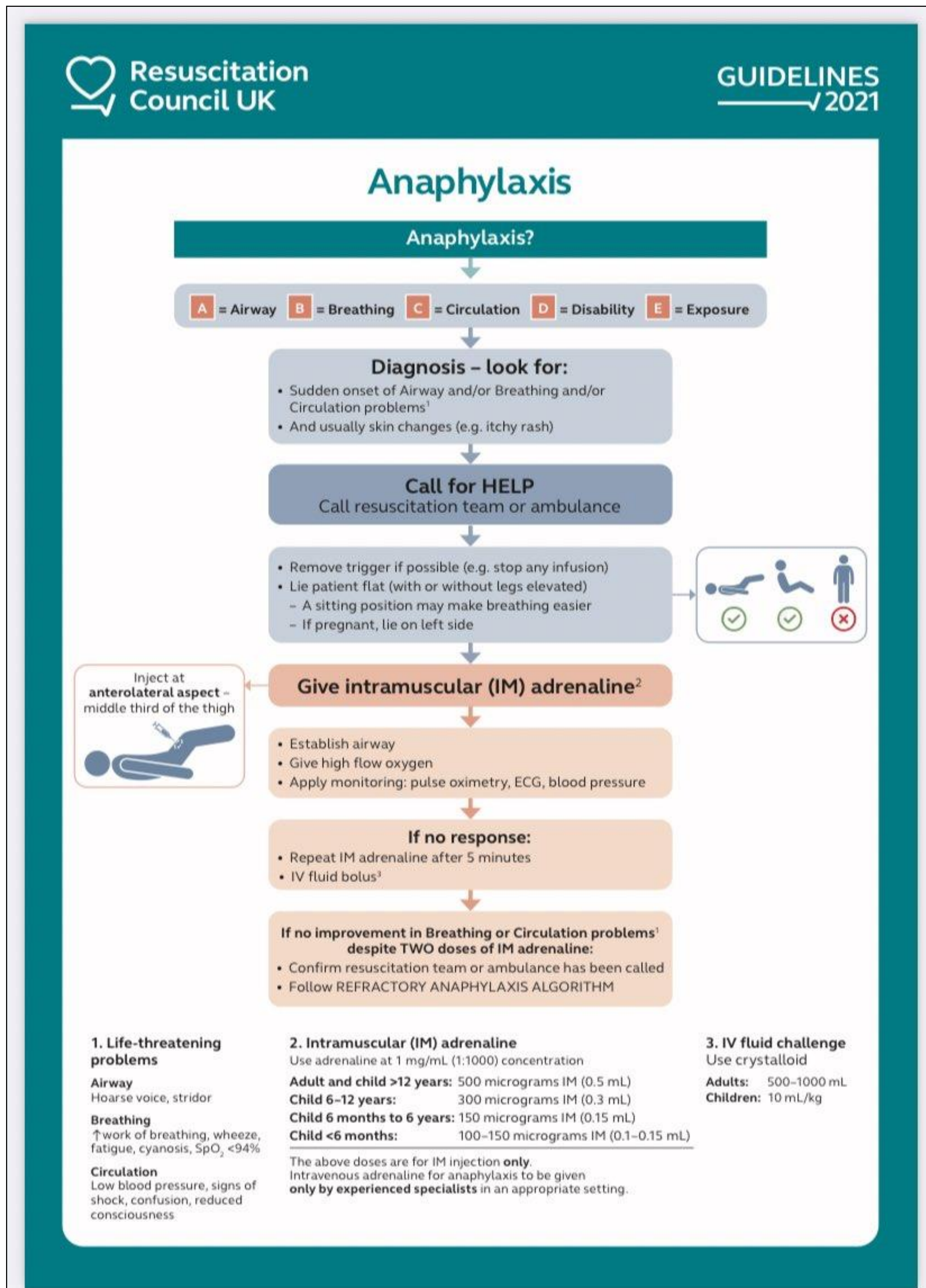


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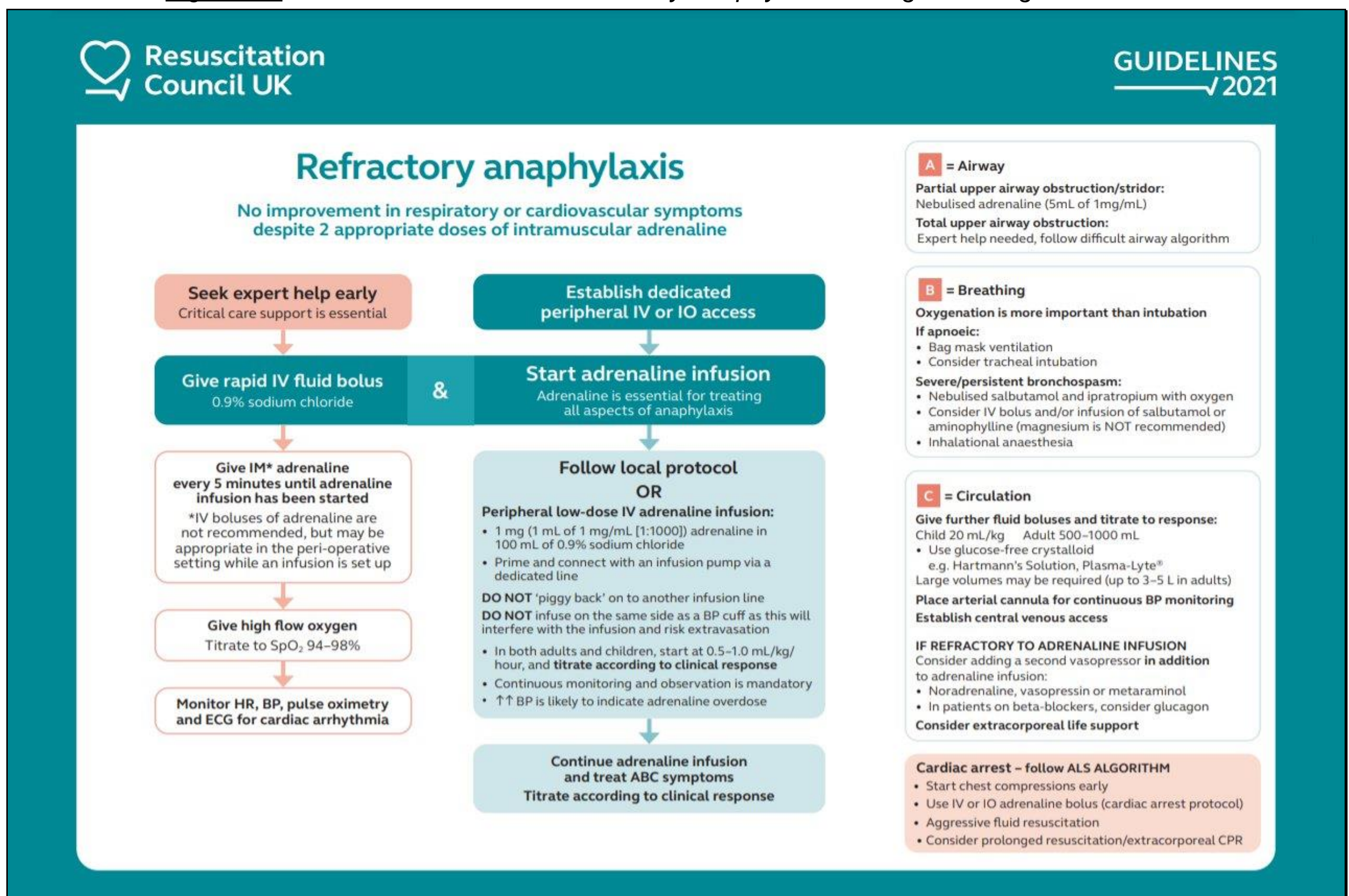
*Figure 2.0 - Resuscitation Council Refractory Anaphylaxis Management Algorithm 2021[7]*




*Although routine administration of corticosteroids to treat anaphylaxis is not recommended, there is no evidence for or against their use for refractory anaphylaxis. It is reasonable to consider corticosteroids (such as hydrocortisone) for refractory reactions after initial resuscitation. It is vital that corticosteroids are not prioritised over adrenaline infusion and fluid resuscitation.

***FOR RESUSCITATION COUNCIL (2021) & NICE CG134: ANAPHYLAXIS GUIDANCE PLEASE FOLLOW THIS LINK VIA BeatAnaphylaxis.co.uk WEBSITE***

## References:

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3. Baseggio Conrado A, Ierodiakonou D, Gowland MH, Boyle RJ, Turner PJ. Food anaphylaxis in the United Kingdom: analysis of national data, 1998– 2018. BMJ. 2021 Feb 17;372:n251.
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5. Dodd A, Hughes A, Sargant N, Whyte AF, Soar J, Turner PJ. Evidence update for the treatment of anaphyalxis. Resuscitation 2021. https://doi.org/10.1016/j.resuscitation.2021.04.010 [Available on-line 23 April 2021].
6. Cardona V, Ansotegui I, Ebisawa M, et al, on behalf of the World Allergy Organisation Anaphylaxis Committee. Anaphylaxis Guidance 2020. World Allergy Organization Journal 2020; doi:10.1016/j.waojou.2020.100472.
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