Anaphylaxis

Anaphylaxis is a serious systemic hypersensitivity reaction that is usually rapid in onset and may cause death. **Anaphylaxis is highly likely when any ONE of the following 2 (WAO)**

1

Acute onset (minutes to several hours)
AND
Mucocutaneous involvement
(e.g., generalized hives, pruritus or flushing, swollen lips, tongue -uvula)
AND at least one of the following

Or

Respiratory
(e.g, dyspnea, wheeze-bronchospasm, stridor, reduced Peak Expiratory flow, hypoxemia; SpO2 <94%)

Or

Cardiovascular
(e.g, hypotension [collapse], syncope)

Or

Gastrointestinal
(e.g, severe campy abdominal pain, repetitive vomiting)

2

Known or highly likely allergen for that patient
+ Acute onset (minutes to several hours)
AND

Or

Hypotension

Or

Laryngeal symptoms
Stridor, vocal changes, odynophagia

Or

Bronchospasm

***Even in the absence of typical skin involvement**

***Hypotension:**
A decrease in systolic Blood Pressure (BP) > than 30% from baseline, OR
i. Infants and children < 10 years:
systolic BP < (70 mmHg + [2 x age in years])
ii. Adults and children >10 years: systolic BP < 90 mmHg.

Adrenaline IM
Adults 0.3-0.5 mg of 1 mg/ml (1:1000). Maximum 0.5 mg
Children 0.01 mg/kg of 1 mg/ml (1:1000). Maximum 0.5 mg
In the mid-anterolateral thigh
Repeat every 5-10 minutes up to 2 doses, IV fluid boluses, if no response Call intensive care/anaesthesia for IV adrenaline infusion*

- **Move to Resuscitation** (ABC, Continuous monitoring of BP, heart rate, respiratory rate, oxygen saturation)
- **Remove trigger**
- **Position patient** (Supine with legs elevated, semi sitting if difficulty breathing or vomiting. If pregnant on her left side)
- **Secure wide bore cannula**
- **Oxygen** (8-10 L/min. Up to 100% FiO2)
- **Intubation if necessary**
- **Fluid challenge**: 1-2L of isotonic saline or crystalloid. Children 10-20 mL/kg per bolus
- **Adrenaline Infusion Indications:**
  * Contraindication to IM (eg. coagulopathy)
  * Refractory to 2 doses of IM adrenaline and IV fluids
  * IV adrenaline infusion dose: 0.1mg/ml (1:10000), 0.1-1 mcg/kg/min (Titrate to effect)
- **Salbutamol nebulizer**
- **Glucagon**: (for patients on Beta-blockers not responding to adrenaline & fluid resuscitation): infuse slowly as may cause vomiting. Dose: 1-5 mg slow IV bolus over 5 min. Maybe followed by an infusion of 5-15 mcg/min. Pediatric dose: 20-30 mcg/kg (max 1 mg) slow IV bolus. Maybe followed by an infusion of 5-15 mcg/min titrated to effect
- Chlorpheniramine malate: (given later to treat cutaneous symptoms)
- Hydrocortisone: (Controversial)
- **Cardiac arrest**: Follow ACLS/PALS guidelines

Pregnant Women

SAME MANAGEMENT AND DRUG DOSES

- Position on left side so the gravid uterus does not compress the inferior vena cava and impede venous return to the heart
- Maintain systolic BP > 90 mm Hg to ensure adequate placental perfusion
- Continuous monitoring of both mother and foetus
- **Cardiac arrest: Follow ACLS guidelines**

Admission

Criteria for ICU/HDU admission	General ward admission
• Use of more than 2 doses of IM adrenaline • Use of IV adrenaline • Refractory shock • Severe bronchospasm • **Previous biphasic reaction:** (The recurrence of allergic symptoms within 1–72 hours despite no further exposure to the allergen)	• Admit for observation for 12-24 hours after 1 dose of IM adrenaline • Refer to Immunology and allergy speciality for evaluation and advice

Medication on discharge and follow up

1. Discharge with a clear written anaphylaxis action plan and allergen avoidance advice (Appendix 1)
2. Adrenaline autoinjector: 0.3 mg for adults and children >30kg, 0.15 mg for children <30 kg with education on how and when to use it (until seen by an allergist) (See links to educational videos for some brands in Appendix 2)
3. Referral to Immunology and Allergy clinic

Appendix 1

- **www.osaci.om**

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Appendix 2

- **www.osaci.om**
- **PENEPIN: https://www.youtube.com/watch?v=PSLoSD-TD74**
- **Penepin: https://youtu.be/u2ULkiEoy04**
- **Autoinjector: https://www.youtube.com/watch?v=ziEPZlovDgk**

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References:

1- World Allergy Organization Anaphylaxis Guidance 2020, position paper, Vol 13, issue 10, 01 October 2020
2- Resuscitation UK: **Emergency treatment of anaphylaxis,** Guidelines for healthcare providers Working Group of Resuscitation Council UK, May 2021, https://www.resus.org.uk/sites/default/files/2021-05/Emergency%20Treatment%20of%20Anaphylaxis%20May%202021_0.pdf
3- UpToDate: Anaphylaxis: Emergency treatment, updated Aug 2022
4- EAACI: *EAACI guidelines: Allergy, Anaphylaxis (2021 update): 2022 Feb;77(2):357-377. doi: 10.1111/all.15032. Epub 2021 Sep 1*

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