

Acute Allergic Reaction

SESLHDPR/403

Aim:

- Early identification and treatment of life threatening causes of allergic reaction, escalation of care for patients at risk.
- Early initiation of treatment / clinical care and symptom management within benchmark time.

Assessment Criteria: On assessment the patient should have one or more of the following signs / symptoms:

- | | | |
|------------------------------------|-----------------------------------|--|
| <input type="checkbox"/> Urticaria | <input type="checkbox"/> Rhinitis | <input type="checkbox"/> Tingling/warmth |
| <input type="checkbox"/> Erythema | <input type="checkbox"/> Pruritus | <input type="checkbox"/> Tearing |

Escalation Criteria: Immediate life -threatening presentations that require escalation and referral to a Senior Medical Officer (SMO):

- | | | |
|---|--|--|
| <input type="checkbox"/> Airway at risk | <input type="checkbox"/> Tachycardia / hypotension | <input type="checkbox"/> Angioedema of face/neck/tongue/lips |
| <input type="checkbox"/> Respiratory distress | <input type="checkbox"/> SpO ₂ <92% | <input type="checkbox"/> Cyanosis |

Primary Survey:

- | | |
|---|---|
| • Airway: patency | • Breathing: resp rate, accessory muscle use, air entry, SpO ₂ . |
| • Circulation: perfusion, BP, heart rate, temperature | • Disability: GCS, pupils, limb strength, remove allergen |

Notify CNUM and SMO if any of the following red flags is identified from Primary Survey and Between the Flags criteria 1

- | | | |
|---|---|--|
| <input type="checkbox"/> Airway – at risk | <input type="checkbox"/> Breathing – respiratory distress | <input type="checkbox"/> Circulation – shock / altered perfusion |
| • <i>Partial / full obstruction</i> | • <i>RR < 5 or >30 /min</i> | • <i>HR < 40bpm or > 140bpm</i> |
| | • <i>SpO₂ < 90%</i> | • <i>BP < 90mmHg or > 200 mmHg</i> |
| <input type="checkbox"/> Disability – decreased LOC | <input type="checkbox"/> Exposure | • <i>Postural drop > 20mmHg</i> |
| • <i>GCS ≤ 14 or a fall in GCS by 2 points</i> | • <i>Temperature <35.5°C or >38.5°C</i> | • <i>Capillary return > 2 sec</i> |
| | • <i>BGL < 3mmol/L or > 20mmol/L</i> | |

History:

- Presenting complaint
- Allergies
- Medications: Anticoagulant Therapy, Anti-hypertensives, Diabetic meds, Analgesics, Inhalers, Chemotherapy, Non-prescription meds, Any recent change to medications.
- Past medical past surgical history (relevant)
- Last ate / drank & last menstrual period (LMP)
- Events and environment leading to presentation
- Pain Assessment / Score: **PQRST** (Palliating/ provoking factors, Quality, Region/radiation, Severity, Time onset)
- Associated signs / symptoms: urticarial rash, shortness of breath, itchiness, tightness in throat, swelling to face /lips /tongue
- History: family, trauma and travel

Systems Assessment:

Focused respiratory assessment:

- *Inspection:* rate and depth of breathing, quality of voice, use of accessory muscles, swelling to face/lips/tongue, note skin colour, degree of lacrimation, distribution and characteristics of rash, and level of consciousness.
- *Palpation:* identify cap refill (<2secs), note respiratory rate, symmetry and depth.
- *Auscultation:* listen to all lung fields, note description of air entry and any adventitious sounds e.g. wheeze, crepitus.

Notify CNUM and Senior Medical Officer (SMO) if any of following red flags is identified from History or Systems Assessment.

- | | | |
|---|--|---|
| <input type="checkbox"/> Sudden onset | <input type="checkbox"/> Asthma | <input type="checkbox"/> Recent oral intake (food allergy) |
| <input type="checkbox"/> Previous anaphylaxis | <input type="checkbox"/> Post blood administration | <input type="checkbox"/> Recent new pharmacological therapy |
| <input type="checkbox"/> Known hypersensitivities/allergies | <input type="checkbox"/> Cardiac disease | <input type="checkbox"/> Envenomation |

Investigations / Diagnostics:

Bedside:

- BGL: If < 3mmol/L or > 20mmol/L notify SMO
- ECG: [as indicated] look for Arrhythmia , AMI

Nursing Interventions / Management Plan:

Resuscitation / Stabilisation:

- Oxygen therapy & cardiac monitor
- IV Cannulation (16-18 gauge if unstable)

Symptomatic Treatment:

- **Adrenaline:** as per medical order
- **Antihistamine:** as per district standing order
- **Antiemetic:** as per district standing order

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- **Analgesia:** as per district standing order
- **IV Fluids:** as per district standing order

Supportive Treatment:

- Nil By Mouth (NBM)
- Monitor vital signs as clinically indicated
BP, HR, T, RR, SpO₂
- Monitor neurological status GCS as clinically indicated
- Monitor pain assessment / score
- Fluids Balance Chart (FBC)

Practice Tips / Hints:

- It is not uncommon for those who have previously had a mild food induced allergic reaction to present with full anaphylaxis, therefore the severity of reactions cannot be predicted from the reaction history.³
- Allergy to medicines, in particularly antibiotics, anaesthetic drugs, non-steroidal anti-inflammatory drugs and opiates are common.^{4,5}
- Asthma and cardiovascular disease in particular are associated with an increased risk of severe or fatal anaphylaxis.
- The use of concurrent medications, such as beta blockers and angiotensin converting enzyme (ACE) inhibitors, can also increase the severity of anaphylaxis and/or render anaphylaxis more refractory to treatment.
- Adrenaline is first line treatment for anaphylaxis and acts to reduce airway mucosal oedema, induce bronchodilation, induce vasoconstriction and increase strength of cardiac contraction.⁵
- Intramuscular (IM) injection into the anterolateral thigh is the preferred route for the initial administration of adrenaline. IM is advised due to a rapid absorption rate and ease of access avoiding delays associated with obtaining IV access.²
- Urticaria, erythema and angioedema may be transient, subtle and easily overlooked. In some fatal food induced anaphylaxis cases, severe cardiovascular symptoms developed without skin or respiratory symptoms.⁴⁻⁵
- Patients should be observed for at **least 4 hours** after last the dose of adrenaline and may even require overnight observation in hospital if they had a severe or protracted anaphylaxis e.g. required repeated doses of adrenaline or IV fluid resuscitation, have a history of asthma or arrhythmia, or if they live alone.⁵
- Long term management is essential to minimise risk, all patients presenting with anaphylaxis should be referred to an allergy specialist and strongly encouraged to monitor their co-morbidities with their local doctor.
- Antihistamines have no role in treating or preventing respiratory or cardiovascular symptoms of anaphylaxis. Anti-histamines primarily relieve cutaneous symptoms such as; urticaria, itchiness and erythema.³⁻⁵

Further Reading / References:

1. Australian Resuscitation Council (2016) ANZCOR Guideline 9.2.7 – First Aid Management of Anaphylaxis. Access from : https://securereservercdn.net/198.71.190.10/777.066.myftpupload.com/download/9_2_medical/anzcor-guideline-9-2-7-anaphylaxis-aug16.pdf
2. Recognition and management of patients who are deteriorating (PD2020_015). Available from https://www1.health.nsw.gov.au/pds/ActivePDSDocuments/PD2020_018.pdf
3. Moore, T. (2007). "Respiratory Assessment in Adults." *Nursing Standard* 21(49): 48-56.
4. Cameron, P., et al. (2009). *Textbook of adult emergency medicine*. Edinburgh, Churchill Livingstone Elsevier.
5. Picher, WJ (2021) An approach to the patient with drug allergy. Accessed from: https://www.uptodate.com/contents/an-approach-to-the-patient-with-drug-allergy?search=allergic%20reaction&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1

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- Murphy, M (2007) Emergency Department Toolkits. Westmead Hospital, SWAHS
- Hodge, A (2011) Emergency Department, Clinical Pathways. Prince of Wales Hospital SESLHD.

Revision & Approval History

Date	Revision No.	Author and Approval
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