Clinical Practice Guideline for Management of Anaphylaxis
Emergency Department, Urgent Care, Inpatient, Ambulatory

Revised 06/20, 2/2022
Original 2/2019

0 min

Rapid Recognition of Anaphylaxis

Definition of anaphylaxis:

*1) Severe respiratory symptoms **OR***

*2) Severe cardiovascular symptoms **OR***

3) ≥1 symptom in ≥2 organ systems that occur suddenly post allergen exposure

Skin/Mucosal
- Hives
- Flushing
- Rash
- Itching
- Tearing or red eyes
- Swelling (e.g. lips/tongue/ eyes)

Respiratory
- Stridor
- Hypoxia
- Cough
- Hoarseness
- Wheeze
- Congestion
- Dyspnea
- Sneezing
- Chest tightness

Cardiovascular
- Hypotension
- Chest pain
- Arrhythmia
- Shock
- Tachy/bradycardia
- Syncope

Gastrointestinal
- Nausea
- Abdominal pain
- Vomiting
- Diarrhea
- Swallowing problem

CNS
- Headache
- Vision changes
- Dizziness
- Seizures
- Confusion
- Altered mental status

Immediately stop exposure to suspected medication or agent

- Manage airway, breathing, and circulation
- Apply O2 via non-rebreather and keep sats ≥94%
- Place patient in supine position, unless patient in respiratory distress

Call for assistance:

In hospital:
- Notify Provider
- Emergent: CODE BLUE 5-6161
- Urgent: RAPID RESPONSE TEAM 5-TEAM (5-8326)

Outpatient/Urgent Care:
- Alert on-call Provider if not present
- Emergent: 9-911
- Urgent; or, cannot observe for 4+hours: Transfer Center

5 min

Administer IM EPINEPHrine Immediately into the anterolateral thigh

Injectable Epinephrine available in code cart,as override in omnicell, or medication room
Concentration 1mg/mL

Quick Dose epi IM:
Concentration 1mg/mL
- **<10kg: 0.1mg= *0.1mL IM***
- **10-30kg: 0.15mg= *0.15mL IM***
- **>30kg: 0.3mg= *0.3mL IM***

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Skin/Mucosal	Respiratory	Cardiovascular	Gastrointestinal	CNS
• Hives • Rash • Tearing or red eyes • Swelling (e.g. lips/tongue/eyes) • Flushing • Itching	• Stridor • Cough • Wheeze • Dyspnea • Chest tightness • Hypoxia • Hoarseness • Congestion • Sneezing	• Hypotension • Arrhythmia • Tachy/bradycardia • Syncope • Chest pain • Shock	• Nausea • Abdominal pain • Vomiting • Diarrhea • Swallowing problem	• Headache • Dizziness • Confusion • Altered mental status • Vision changes • Seizures

Immediate Management

ABCs

Immediately stop exposure to suspected medication or agent

- Manage airway, breathing, and circulation
- Apply O2 via non-rebreather and keep sats ≥94%
- Place patient in supine position, unless patient in respiratory distress

Call for Assistance

In hospital:
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Rescue Medications-*Injectable epi available in code cart, override in omnicell, or medication room*

- Administer IM EPINEPHrine (epi), ***within 5 minutes***, in the anterolateral thigh

Concentration: **1mg/mL**

Quick Dose epi IM:
- **<10kg: 0.1mg= *0.1mL IM***
- **10-30kg: 0.15mg= *0.15mL IM***
- **>30kg: 0.3mg= *0.3mL IM***

Failure to respond to first dose of epi:
- Administer another dose of IM epi (can be administered every 5-15 minutes for rapid progression of symptoms OR failure to respond)
- Obtain IV/IO access
- If hypotensive administer isotonic IV fluid, 20mL/kg, rapidly, over 5-10 minutes
- If wheezing: *Albuterol* (see page 3)

PALS criteria for hypotension based on Systolic Blood Pressure (SBP):

AGE	*SBP*
Neonates *(0-28 days)*	<60
Infants *(1-12 months)*	<70
Children *(1-10 years)*	<70 + [Age in yrs x2]
Children *(>10 years)*	<90

Additional Medication/ Interventions

See page 3 for dosing

If upper airway obstruction/ stridor:
Consider racemic EPINEPHrine

H1-Blocker Recommended:
Liquid concentration preferred for all PO doses to increase absorption
Choose from ONE of the following:
- DiphenhydrAMINE PO/IV/IM;
- Cetirizine PO;
- HydrOXYzine IM/PO;
- Loratidine PO

Steroid Treatment (optional):
PrednisoLONE PO
OR
MethylPREDNISolone IV/IM

Observation/Admission Criteria

Observation Period

- If NO hypotension, observe for a minimum of 4 hours prior to discharge
- Patients with resolved respiratory compromise and/or hypotension, observe 6-8 hours prior to discharge

Admission Criteria

- Persistent symptoms >4 hours
- Worsening symptoms
- History of severe biphasic reaction
- History of severe asthma
- Required more than 1 dose of epi
- Required a fluid bolus

Consider PICU Admission

- Hemodynamic instability
- Respiratory failure
- Continued/recurrent airway compromise
- Requiring any of the following:
  - >40mL/kg volume
  - >2 doses of IM epi
  - >1 continuous neb
  - Pressors
  - Heliox
  - NIPPV

Discharge Planning

Prior to Discharge

- Consider consulting allergy for inpatients who experience a biphasic reaction or are high-risk asthmatics
- Consider Case Management consult to assist with filling prescription for epinephrine autoinjectors

Education and Prescriptions

1. Prescribe epinephrine autoinjector
2. Prescribe other meds as indicated *(see page 3)*
3. Follow up with Allergist in 3-4 weeks
4. Epinephrine autoinjector video
5. Food and Allergy Action Plan

Medication Recommendations

Antihistamines

Medication	Standard mg/kg Dose	Recommended Frequency
DiphenhydrAMINE *(Benadryl)*	1mg/kg/dose PO/IV/IM Max dose 50mg	Q6H PRN
Cetirizine *(Zyrtec)*	6-23 months old: 2.5mg PO 24 months-5 years old: 2.5-5mg PO ≥6 years old: 5-10mg PO	Once daily PRN
HydrOXYzine *(Vistaril)*	≤40kg: 0.5mg/kg/dose PO >40kg: 25-50mg PO	≤40kg: QID PRN >40kg: Once daily PRN
Loratadine *(Claritin)*	2-6 years old: 5mg PO ≥6 years old: 10mg PO	Once daily PRN

Additional Medications

Medication	Standard mg/kg Dose	Recommended Frequency
Albuterol	**<15kg:** Intermittent 2.5mg Continuous 7.5mg/hr **≥15kg:** Intermittent 5mg Continuous 15mg/hr	•Q4-6H for 24 hours; *then,* • Q4-6H PRN for cough/wheezing/difficulty in breathing
PrednisoLONE	1mg/kg/dose PO Max dose: 60mg	If clinically indicated: •Weight-based PO daily •2-5 day course
MethylPREDNISolone	2mg/kg/dose IV/IM Max dose: 125mg If IV, infuse over 10 minutes	N/A
Famotidine* (*Pepcid)* (per provider discretion)	*IV 0.25mg/kg x1 (max dose of 20mg) *Tablet 0.5mg/kg (max dose of 40mg) *Suspension 0.5mg/kg (max dose 40mg)	*No clear evidence of benefit from H2 blockers in immediate treatment of anaphylaxis or biphasic reactions