



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

Excludes Suspected Blood Transfusion Reactions. Refer to **Clinical Policy 7-00 Action for Suspected Transfusion Reaction**

Skin/Mucosal	Respiratory	Cardiovascular	Gastrointestinal	CNS
<ul style="list-style-type: none"> • Hives • Rash • Tearing or red eyes • Swelling (e.g. lips/tongue/eyes) • Flushing • Itching 	<ul style="list-style-type: none"> • Stridor • Cough • Wheeze • Dyspnea • Chest tightness • Hypoxia • Hoarseness • Congestion • Sneezing 	<ul style="list-style-type: none"> • Hypotension • Arrhythmia • Tachy/bradycardia • Syncope • Chest pain • Shock 	<ul style="list-style-type: none"> • Nausea • Abdominal pain • Vomiting • Diarrhea • Swallowing problem 	<ul style="list-style-type: none"> • Headache • Dizziness • Confusion • Altered mental status • Vision changes • Seizures

5 Minutes

ABCs	Call for Assistance	Rescue Medications-Injectable epi available in code cart, override in omniceil, or medication room	PALS criteria for hypotension based on Systolic Blood Pressure (SBP):										
<p>Immediately stop exposure to suspected medication or agent</p> <ul style="list-style-type: none"> • Manage airway, breathing, and circulation • Apply O2 via non-rebreather and keep sats $\geq 94\%$ • Place patient in supine position, unless patient in respiratory distress 	<p>In hospital:</p> <ul style="list-style-type: none"> • Notify Provider • Emergent: CODE BLUE 5-6161 • Urgent: RAPID RESPONSE TEAM 5-TEAM (5-8326) <p>Outpatient/Urgent Care:</p> <ul style="list-style-type: none"> • Alert on-call Provider if not present • Emergent: 9-911 • Urgent; or, cannot observe for 4+ hours: Transfer Center <p>ED:</p> <ul style="list-style-type: none"> • Triage acuity blue (emergent) or red (urgent) 	<ul style="list-style-type: none"> • Administer IM EPINEPHrine (epi), within 5 minutes, in the anterolateral thigh <p>Concentration: 1mg/mL</p> <p>Quick Dose epi IM:</p> <ul style="list-style-type: none"> • <10kg: 0.1mg= 0.1mL IM • 10-30kg: 0.15mg= 0.15mL IM • >30kg: 0.3mg= 0.3mL IM 	<p>Failure to respond to first dose of epi:</p> <ul style="list-style-type: none"> • 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: <i>Albuterol</i> (see page 2) <table border="1"> <thead> <tr> <th>AGE</th> <th>SBP</th> </tr> </thead> <tbody> <tr> <td>Neonates (0-28 days)</td> <td><60</td> </tr> <tr> <td>Infants (1-12 months)</td> <td><70</td> </tr> <tr> <td>Children (1-10 years) [Age in yrs x2]</td> <td><70 +</td> </tr> <tr> <td>Children (>10 years)</td> <td><90</td> </tr> </tbody> </table>	AGE	SBP	Neonates (0-28 days)	<60	Infants (1-12 months)	<70	Children (1-10 years) [Age in yrs x2]	<70 +	Children (>10 years)	<90
AGE	SBP												
Neonates (0-28 days)	<60												
Infants (1-12 months)	<70												
Children (1-10 years) [Age in yrs x2]	<70 +												
Children (>10 years)	<90												

Additional Medication/Interventions

See page 2 for dosing

If upper airway obstruction/stridor:
Consider racemic EPINEPHrine

H1 blocker recommended for cutaneous symptoms such as urticaria and pruritis. If using, liquid formulation preferred to optimize absorption:

Give any one of the following:

- Cetirizine (Zyrtec) PO preferred over DiphenhydrAMINE (Benadryl) if readily available, otherwise Benadryl PO
- DiphenhydrAMINE (Benadryl) PO/IV/IM (IV only if unable to take PO)
- HydroXYzine IM/PO
- Loratidine PO

H2 Blockers are *not routinely indicated* – may consider if GI symptoms

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

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

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

- Consult allergy for inpatients who have difficult to treat reactions (such as biphasic or prolonged reactions) or high risk asthma
- 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 2)
3. Follow up with Allergist in 3-4 weeks
4. Epinephrine autoinjector video



Antihistamines (H1 Blockers)	Medication	Standard mg/kg Dose	Frequency
	Give any one of the following:		
	Cetirizine (<i>Zyrtec</i>) *Preferred over DiphenhydrAMINE if readily available, otherwise Benadryl PO	6-23 months old: 2.5mg PO 24 months-5 years old: 2.5-5mg PO ≥6 years old: 5-10mg PO	Q24H PRN cutaneous symptoms (urticaria, pruritis)
	DiphenhydrAMINE (<i>Benadryl</i>)	1mg/kg/dose PO/IV/IM Max dose 50mg	Q6H PRN cutaneous symptoms (urticaria, pruritis)
	HydrOXYzine (<i>Vistaril</i>)	≤40kg: 0.5mg/kg/dose PO >40kg: 25-50mg PO	Q6H PRN cutaneous symptoms (urticaria, pruritis)
Loratadine (<i>Claritin</i>)	2-6 years old: 5mg PO ≥6 years old: 10mg PO	Q24H PRN cutaneous symptoms (urticaria, pruritis)	
Additional Medications	Medication	Standard mg/kg Dose	Frequency
	Albuterol	<15kg: Intermittent 2.5mg Continuous 7.5mg/hr ≥15kg: Intermittent 5mg Continuous 15mg/hr	•Q4-6H for 24 hours; <i>then</i> , •Q4-6H PRN for cough/wheezing/difficulty in breathing
	<i>Steroids are not routinely recommended . They do not appear to affect biphasic reactions in anaphylaxis. May use in specific circumstances such as history of asthma.</i>		
	PrednisolONE	1mg/kg/dose PO Max dose: 60mg	If clinically indicated: •2-5 day course
	Dexamethasone	0.6 mg/kg PO (Max dose 16 mg) <12 kg: 4 mg 12 to <15 kg: 8 mg 15 to <25 kg: 12 mg ≥25 kg: 16 mg	
	MethylPREDNISolone	2mg/kg/dose IV/IM Max dose: 125mg If IV, infuse over 10 minutes	
Famotidine* (<i>Pepcid</i>) *No clear evidence of benefit from H2 blockers in immediate treatment of anaphylaxis or biphasic reactions. *May use if GI symptoms	*IV 0.25mg/kg x1 (max dose of 20mg) *Tablet 0.5mg/kg (max dose of 40mg) *Suspension 0.5mg/kg (max dose 40mg)		