

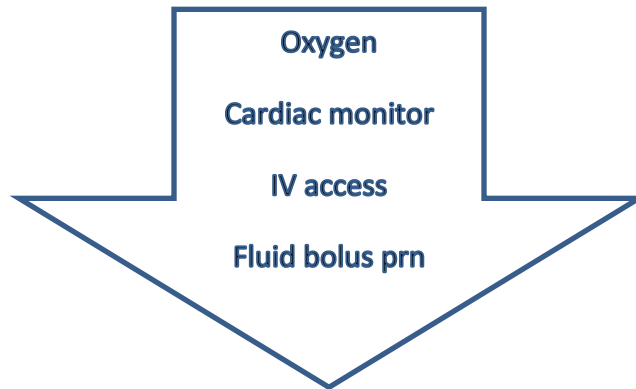
If a patient is experiencing **anaphylaxis**, there should be an **immediate effort to administer EPINEPHRINE** as below



Anaphylaxis should be suspected when either criteria 1 or 2 is met:

1. Changes in skin and/or mucosa (hives or pruritis or swelling), AND new onset of one of:
  - resp distress, or
  - signs of shock, or
  - severe GI symptoms
2. Acute onset hypotension or bronchospasm or laryngeal changes after common allergen (minutes to hours)

<b>EPINEPHRINE</b>	
	Preferred route IM into thigh: epinephrine <b>0.5 mg in 0.5 mL IM</b> into thigh or deltoid muscle q15 min prn (for patients > 40 kg) <i>Paediatric dose is 0.01 mg/kg IM into thigh muscle</i>
	Alternative IV route: epinephrine <b>0.05 mg IV</b> q1-5 min <b>extreme caution- dose is 1/10<sup>th</sup> above</b> i.e. 0.5 mL from 10 ml syringe [1 mg in 10 mL syringe] – premade 10 mL syringe on crash cart



*Additional optional therapies in table on other side can be considered*

**\*If reaction occurs soon after insertion of a central line coated in CHLORHEXIDINE, consider removing the line**

If ongoing epinephrine required: can start IV infusion with epinephrine 1mg mixed in mini-bag of normal saline or D5W and run as per below chart. <i>Dose range of epinephrine is 4-10 mcg/min IV</i>				
Epinephrine Added	Size of mini-bag NS or D5W	Concentration in mini-bag	Starting dose	Starting rate
1 mg	50 mL	20 mcg/mL	4 mcg/min	12 mL/hr
1 mg	100 mL	10 mcg/mL	4 mcg/min	24 mL/hr
1 mg	250 mL	4 mcg/mL	4 mcg/min	60 mL/hr
1 mg	500 mL	2 mcg/mL	4 mcg/min	120 mL/hr
1 mg	1000 mL	1 mcg/mL	4 mcg/min	240 mL/hr

*Additional Optional Therapies Table: Note for anaphylaxis, these occasionally are given in addition to epinephrine, but their use should not delay giving epinephrine. H2RA, i.e. ranitidine, is no longer indicated after anaphylaxis onset.*

<b>Clinical Findings</b>	<b>Optional Patient Care Intervention(s)</b>
Itching, flushing, urticaria, hives, erythema	Diphenhydramine 12.5-50 mg IV q4h prn <i>caution very sedating</i> Loratadine 5-10 mg oral once
Wheezing	Salbutamol 2 puffs, 1 minute apart, may repeat q30 min prn Salbutamol nebulizer; 5 mg in 3 mL saline q30 min prn
Stridor, cyanosis, angioedema, hypoxia	Hydrocortisone 100-250 mg IV <i>preferred for fast onset</i> Methylprednisolone 1-2 mg/kg IV [max 125 mg IV]
Chest tightness, tachycardia, hypotension	Crystalloid fluid; 10-30 mL/kg over 15-30 min prn to MAP $\geq$ 60 Nitroglycerin 0.4 mg – 1 spray ONLY IF MAP > 60 [Other anti-ischemic agent(s) at discretion of physician] Hydrocortisone 100-250 mg IV
Requires vasopressor(s) to keep SBP > 90/MAP > 60	Consider Adding: Vasopressin 0.04-0.08 units/min IV infusion
Patient on B Blockers	Consider increasing dose of epinephrine, titrate to effect: Epinephrine infusion 4-30 mcg/min IV infusion Consider if available: glucagon 1-5 mg slow IV bolus over 5 min
Seizure	Lorazepam 1-4 mg IV q5 min prn Midazolam 2-5 mg IV q5 min prn
Nausea, vomiting	Ondansetron 4-8 mg IV q4h prn
Abdominal pain/cramps	Hydromorphone 0.2 mg SC/IV q1h prn [or equivalent dose of Fentanyl] at discretion of physician assessing the patient

#### **Follow-up testing, if diagnosis or allergen unclear:**

1. Take blood for testing as soon as possible. Results available in 10-12 days but may be useful to confirm diagnosis. Order both tests in Epic and **communicate the time limit to the nurse:**
  - Histamine – EDTA tube on ice, sent immediately to lab. Half-life of 20 min; must be drawn within 1 hour of onset.
  - Tryptase – SST tube. Must be drawn between 15 min and 3 hours of onset.
2. Order out-patient Allergy consult and indicate:
  - if blood testing above sent and time of anaphylaxis symptom onset
  - list possible allergens; consider if latex or chlorhexidine are possible allergens
3. Consider prescription for an epipen on discharge

#### **References:**

1. Critical care management of the patient with anaphylaxis: A concise definitive. Crit Care Medicine April 2021;49(4):693-712
2. The diagnosis and management of anaphylaxis practice parameter: 2010 Update. J Allergy Clin Immunol 2010;126:477-80
3. World allergy organization anaphylaxis guidance 2020. World Allergy Organization Journal (2020) 13:100472. <http://doi.org/10.1016/j.waojou.2020.100472>