Emergency Department Guideline
Anaphylaxis

Inclusion criteria:
1. Acute onset of an illness (minutes to hours) with a AND (b OR c):
   a. Skin and/or mucosa (pruritus, flushing, hives, angioedema)
   b. Respiratory compromise (dyspnea, wheeze, stridor, hypoxemia)
   c. Hypotension or end organ dysfunction (collapse, syncope, incontinence)
2. Two or more of the following occurring rapidly after exposure to likely allergen
   a. Skin and/or mucosa (pruritus, flushing, hives, angioedema)
   b. Respiratory compromise (dyspnea, wheeze, stridor, hypoxemia)
   c. Hypotension or end organ dysfunction (collapse, syncope, incontinence)
   d. Persistent GI symptoms (vomiting, crampy abdominal pain, diarrhea)
3. Exposure to known allergen and hypotension

Triage considerations:
- Triage level 1 for hypotension or respiratory compromise, Triage level 2 all others
- Vital signs with BP, continuous pulse ox
- O2 for patients with respiratory compromise via facemask, consider O2 for all patients
- Notify physician if capillary refill ≥ 3 seconds, skin is mottled, ill appearing child, or depressed LOC
- Place in supine position (to prevent or counteract potential circulatory collapse)

Laboratory studies:
- Consider serum tryptase level which can be helpful in follow-up if diagnosis of anaphylaxis is in doubt
- iStat CG4 if critically ill with severe respiratory symptoms or hypotension

Imaging:
- Consider CXR if respiratory compromise and/or diagnosis of anaphylaxis in doubt

Medications/interventions:
- Epinephrine: Inject intramuscularly in the mid-outer thigh
  o Epipen 0.15mg for children < 30kg
  o Epipen 0.3mg for children ≥ 30kg
- Normal Saline, 20 ml/kg IV fluid bolus for patients with hemodynamic instability
- Nebulized albuterol (2.5mg/3 ml saline) for respiratory symptoms
• Glucagon in patients receiving β-adrenergic blocking medications and not responding to epinephrine. Administer over 5 minutes, may repeat q15min, followed by infusion 5-15ug/min titrated to effect.
  o <25kg: 0.5mg,
  o >25kg: 1mg
• Adjunct therapy (consider):
  o H1 blocker
    ▪ Benadryl PO/IM/IV: 1mg/kg, max 50mg
  o H2 blocker (synergistic effect when used with H1 blocker)
    ▪ Ranitidine IV: 1mg/kg, max 50mg
    ▪ Ranitidine PO: 3mg/kg, max 150mg
  o Corticosteroid (one time dose in ED)
    ▪ Dexamethasone PO/IM/IV: 0.6mg/kg, max 16mg
    ▪ Methylprednisolone IV: 1mg/kg, max 125mg

Consultations:
• Consider follow-up with an allergist if diagnosis is in doubt or allergy not previously known

Reassessments:
• Vitals Q15min

Differential diagnosis:
• Acute urticaria
• Hereditary angioedema
• Sepsis
• Staph scalded skin
• Toxic shock
• Asthma exacerbation
• Anxiety disorder/panic attack

Discharge or Admission criteria:
• PICU
  o Hemodynamic instability not improved by epinephrine injections
  o Requiring epinephrine infusion
  o Requiring invasive ventilation or concern for worsening airway compromise
• Inpatient floor
  o Any requirement of IV fluids for hemodynamic instability
  o Widening pulse pressure in triage (defined as diastolic blood pressure that is lower than or equal to half the systolic blood pressure.)
  o Any airway involvement (mouth, throat, sensation of pharyngeal edema)
  o Delay from start of symptoms to ED presentation/Epi administration > 90 minutes
  o Symptoms requiring ≥ 2 doses of Epinephrine
  o History of severe anaphylaxis, biphasic reaction, or asthma
  o Consider for adolescents with food allergy or all children aged 6-9
• Discharge home
  o Consider discharge home after 2-4 hour ED observation in patients who do not meet prolonged observation (inpatient) criteria
Prescribe auto-injectable epinephrine (2 pack)
Provide anaphylaxis action plan (.ANPXACTIONPLAN)

Quality measures:
- EpiPen administration within 5 minutes of diagnosis
- 20ml/kg NS bolus administration within 15 minutes if low BP

References:


Includes patients:
- Suspected anaphylaxis (see anaphylaxis criteria visual aid on following page)

Triage:
- ABC care as needed
- Level 2
- BP, Cont. pulse ox
- O2 facemask
- Place supine

Hemodynamic instability or airway compromise?
Yes
- Notify MD, Level 1
- Resuscitation room
- ABC
- EpiPen IM
- NS bolus if low BP
- Albuterol if bronchospasm
- Arrange PICU if ongoing concerns
- -iSTAT CG4

MD H&P

PICU
- Continuous albuterol
- Consider intubation
- CXR

Respiratory symptoms persistent?
Yes
- Epinephrine infusion (0.05-0.1mcg/kg/min)

Continued hemodynamic instability?
Yes
- Epinephrine infusion (0.05-0.1mcg/kg/min)

Disposition
Inpatient if:
- Use of IV fluids for hemodynamic instability
- Widened pulse pressure in triage (defined as diastolic blood pressure that is lower than or equal to half the systolic blood pressure
- Airway involvement (mouth, throat, sensation of pharyngeal edema)
- Delay > 90 min from start of symptoms to ED presentation/Epi administration
- Symptoms requiring ≥ 2 doses of Epinephrine
- History of severe anaphylaxis, biphasic reaction, or asthma
- Consider for adolescents with food allergy, all children age 6-9

Discharge Home after observation of 2-4 hours:
- Consider discharge home in patients who do not meet prolonged observation (inpatient) criteria
- Prescribe auto-injectable epinephrine (2 pack)
- Provide anaphylaxis action plan (.ANPXACTIONPLAN)

Anaphylaxis, Emergency Department
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