

**Anaphylaxis and Severe
Allergic Reactions
Pre-Printed Orders For
AGE >= 16**

(addressograph)

EMERGENCY DEPARTMENT PHYSICIAN'S ORDERS

* These orders expire in 24 hours or sooner if indicated

Anaphylaxis & Severe Allergic Reactions

Allergies: _____

Diagnosis: Anaphylaxis Severe Allergic Reaction (check one; see Appendix in ED Binder)

Other Pertinent Diagnoses: _____

1. Status: ED Hold Ward Admission ICU Telemetry

2. Diet: NPO Clear liquid
 Other _____

3. Activity Bedrest with commode Bedrest with bathroom privilege
 Other _____

4. Nursing

- Airway: Have airway cart at bedside including cricothyroidotomy supplies.
- Place patient in recumbent position, if tolerated.
- Oxygen: Give 6 to 8 liters per minute via face mask, or up to 100% oxygen as needed.
- HR,BP,RR,SaO2, continuous
- O2 to keep SaO2 > 95%

5. IV:

- *Normal saline rapid bolus: Treat hypotension with rapid infusion of 1 L IV NS and then MD reassessment followed by:*
 - Repeat Normal saline _____ ml bolus over _____ minutes
 - IV _____
 - IV lock; flush per routine

6. Labs: _____

7. Investigations: ECG
 CXR - portable

1. Medications: Give the following (check off):

IM Epinephrine (1 mg/mL preparation or 1:1000 preparation):

Give epinephrine 0.5 mg intramuscularly, preferably in the mid-antrolateral thigh; can repeat every 5-15 minutes as needed with MD order. If symptoms are not responding to epinephrine injections, prepare IV epinephrine for infusion (see below)

H2 antihistamine : Give ranitidine 50 mg IV

[] *Glucocorticoid*: Give methylprednisolone 125 mg IV

[] *Bronchodilators*: Give Salbutamol _____ mg (2.5 to 5 mg) in 3 mL saline via nebulizer; repeat as needed (for bronchospasm resistant to IM epinephrine)

[] *H1 antihistamine* : Give diphenhydramine 50 mg IV (for relief of urticaria and itching only)

TREATMENT OF REFRACTORY SYMPTOMS: CALL MD IMMEDIATELY

The following may be ordered by the ED Physician (check those you wish to employ):

- Epinephrine infusion** : , 1-4 micrograms per minute, titrated to effect and with constant hemodynamic monitoring (can go as high as 10ug/min if needed); for patients with inadequate response to IM epinephrine and IV saline, give epinephrine continuous infusion
- Vasopressors: Dopamine** 5 to 20 micrograms per kilogram per minute by continuous infusion, titrated to effect and with constant hemodynamic monitoring; patients may require large amounts of IV crystalloid to maintain blood pressure; if response to epinephrine and saline is inadequate,
- Glucagon**: Patients on beta-blockers not responding to epinephrine→give glucagon 1 to 2 mg IV over 5 minutes, followed by infusion of 5 to 15 micrograms per minute

Other Regular Medications:

11. Discharge Criteria:

Patients being discharged from the ED are given all of the following

- An anaphylaxis emergency action plan
- An epinephrine auto-injector prescription
- Written information (attached)
- A plan for further evaluation ; Follow up appointment: _____ Dr. _____

13. Consults:

[] _____

REASON: _____

Signature _____ Print name _____ Date/Time _____

Appendix: Definitions

Indications for Treatment

Anaphylaxis is highly likely when ANY ONE of the following criteria is fulfilled:

Criterion 1 — Acute onset of an illness (over minutes to several hours) involving the skin, mucosal tissue, or both (eg, generalized hives, pruritus or flushing, swollen lips-tongue-uvula).

AND AT LEAST ONE OF THE FOLLOWING:

- Respiratory compromise (eg, dyspnea, wheeze-bronchospasm, stridor, reduced peak expiratory flow, hypoxemia)
- Reduced blood pressure (BP) or associated symptoms of end-organ dysfunction (eg, hypotonia [collapse] syncope, incontinence).

Note: Cutaneous symptoms are present in up to 90 percent of anaphylactic reactions. This criterion will therefore be used most frequently to make the diagnosis.

Criterion 2 — TWO OR MORE OF THE FOLLOWING that occur rapidly after exposure TO A LIKELY ALLERGEN FOR THAT PATIENT (minutes to several hours):

- Involvement of the skin-mucosal tissue (eg, generalized hives, itch-flush, swollen lips-tongue-uvula)
- Respiratory compromise (eg, dyspnea, wheeze-bronchospasm, stridor, reduced peak expiratory flow, hypoxemia)
- Reduced BP or associated symptoms (eg, hypotonia [collapse], syncope, incontinence)
- Persistent gastrointestinal symptoms (eg, crampy abdominal pain, vomiting)

Note: Ten to 20 percent of people with anaphylaxis lack skin symptoms. This criterion incorporates symptoms in other organ systems and is applied to patients with exposure to a substance that is a likely allergen for them.

Criterion 3 — Reduced BP after exposure TO A KNOWN ALLERGEN FOR THAT PATIENT (minutes to several hours).

- Reduced BP in adults is defined as a systolic BP of less than 90 mmHg or greater than 30 percent decrease from that person's baseline.

* Low systolic BP for children is defined as:

- Less than 70 mmHg from 1 month up to 1 year
- Less than (70 mmHg + [2 x age]) from 1 to 10 years
- Less than 90 mmHg from 11 to 17 years

Note: This criterion is intended to detect episodes of anaphylaxis that consist of isolated cardiovascular symptoms and is applied to individuals who have been exposed to substance to which they are known to be allergic.

Name: _____ Age: _____

Allergy to: _____

Asthma Yes (*high risk for severe reaction*) No

Other health problems besides anaphylaxis: _____

Concurrent medications, if any: _____

Symptoms of anaphylaxis include:

Mouth	Itching, swelling of lips and/or tongue
Throat*	Itching, tightness/closure, hoarseness
Skin	Itching, hives, redness, swelling
Gut	Vomiting, diarrhea, cramps
Lung*	Shortness of breath, cough, wheeze
Heart*	Weak pulse, dizziness, passing out

Only a few symptoms may be present. Severity of symptoms can change quickly.

**** Some symptoms can be life-threatening! ACT FAST!***

What to do:

1. Inject epinephrine in thigh using (*check one*): EpiPen Jr (0.15 mg) Twinject 0.15 mg
 EpiPen (0.3 mg) Twinject 0.3 mg

Other medication/dose/route: _____

IMPORTANT: Asthma puffers and/or antihistamines can't be depended on in anaphylaxis!

2. Call 911 or rescue squad (before calling contacts)!

3. Emergency contact #1: Home _____ Work _____ Cell _____

Emergency contact #2: Home _____ Work _____ Cell _____

Emergency contact #3: Home _____ Work _____ Cell _____

Do not hesitate to give epinephrine!

Comments: _____

Doctor's signature/Date

Parent's signature (for individuals under age 18 yrs)/Date

References

Anaphylaxis Orders
ED Prot-11

Jan 18, 2010

Page 4 of 5

- ▯ Lieberman, P, Camargo, CA, Jr, Bohlke, K, et al. Epidemiology of anaphylaxis: findings of the American College of Allergy, Asthma and Immunology Epidemiology of Anaphylaxis Working Group. *Ann Allergy Asthma Immunol* 2006; 97:596.
- ▯ Decker, WW, Campbell, RL, Manivannan, V, et al. The etiology and incidence of anaphylaxis in Rochester, Minnesota: a report from the Rochester Epidemiology Project. *J Allergy Clin Immunol* 2008; 122:1161.
- ▯ Lin, RY, Anderson, AS, Shah, SN, Nuruzzaman, F. Increasing anaphylaxis hospitalizations in the first 2 decades of life: New York State, 1990 -2006. *Ann Allergy Asthma Immunol* 2008; 101:387.
- ▯ Helbling, A, Humi, T, Mueller, UR, Pichler, WJ. Incidence of anaphylaxis with circulatory symptoms: a study over a 3-year period comprising 940,000 inhabitants of the Swiss Canton Bern. *Clin Exp Allergy* 2004; 34:285.
- ▯ Moneret-Vautrin DA, Morisset M, Flabbee J, Beaudouin E, Kanny G. Epidemiology of life-threatening and lethal anaphylaxis: a review. *Allergy* 2005; 60:443.
- ▯ Lieberman, P. Anaphylactic reactions during surgical and medical procedures. *J Allergy Clin Immunol* 2002; 110:S64.
- ▯ Thong, BY, Yeow-Chan, . Anaphylaxis during surgical and interventional procedures. *Ann Allergy Asthma Immunol* 2004; 92:619.
- ▯ Chacko, T, Ledford, D. Peri-anesthetic anaphylaxis. *Immunol Allergy Clin North Am* 2007; 27:213.
- ▯ Harboe, T, Benson, MD, Oi, H, et al. Cardiopulmonary distress during obstetrical anaesthesia: attempts to diagnose amniotic fluid embolism in a case series of suspected allergic anaphylaxis. *Acta Anaesthesiol Scand* 2006; 50:324.
- ▯ Ebo, DG, Bosmans, JL, Couttenye, MM, Stevens, WJ. Haemodialysis-associated anaphylactic and anaphylactoid reactions. *Allergy* 2006; 61:211.
- ▯ Oswalt, ML, Kemp, SF. Anaphylaxis: office management and prevention. *Immunol Allergy Clin North Am* 2007; 27:177.
- ▯ Sampson, HA, Munoz-Furlong, A, Campbell, RL, et al. Second symposium on the definition and management of anaphylaxis: summary report--Second National Institute of Allergy and Infectious Disease/Food Allergy and Anaphylaxis Network symposium. *J Allergy Clin Immunol* 2006; 117:391.
- ▯ Sampson, HA, Munoz-Furlong, A, Bock, SA, et al. Symposium on the definition and management of anaphylaxis: summary report. *J Allergy Clin Immunol* 2005; 115:584.
- ▯ Pumphrey, RSH. Lessons for management of anaphylaxis from a study of fatal reactions. *Clin Exp Allergy* 2000; 30:1144.
- ▯ Simons, FER, Frew, AJ, Ansotegui, IJ, et al. Risk assessment in anaphylaxis: current and future approaches. *J Allergy Clin Immunol* 2007; 120:S2.
- ▯ Kemp, SF, Lockey, RF. Anaphylaxis: a review of causes and mechanisms. *J Allergy Clin Immunol* 2002; 110:341.
- ▯ Simons, FER. Anaphylaxis, killer allergy: long-term management in the community. *J Allergy Clin Immunol* 2006; 117:367.
- ▯ The diagnosis and management of anaphylaxis: an updated practice parameter. *J Allergy Clin Immunol* 2005; 115:S483.
- ▯ Brown, SGA. Clinical features and severity grading of anaphylaxis. *J Allergy Clin Immunol* 2004; 114:371.
- ▯ Mullins, RJ. Anaphylaxis: risk factors for recurrence. *Clin Exp Allergy* 2003; 33:1033.
- ▯ Webb, LM, Lieberman, P. Anaphylaxis: a review of 601 cases. *Ann Allergy Asthma Immunol* 2006; 97:39.