

Table 6 Management of Acute Reactions in Adults

Urticaria

1. Discontinue injection if not completed
2. No treatment needed in most cases
3. Give H₁-receptor blocker: diphenhydramine (Benadryl[®]) PO/IM/IV 25 to 50 mg.

If severe or widely disseminated: give alpha agonist (arteriolar and venous constriction): epinephrine SC (1:1,000) 0.1 to 0.3 ml (=0.1 to 0.3 mg) (if no cardiac contraindications).

Facial or Laryngeal Edema

1. Give O₂ 6 to 10 liters/min (via mask).
2. Give alpha agonist (arteriolar and venous constriction): epinephrine SC or IM (1:1,000) 0.1 to 0.3 ml (=0.1 to 0.3 mg) or, especially if hypotension evident, epinephrine (1:10,000) slowly IV 1 to 3 ml (=0.1 to 0.3 mg).
Repeat as needed up to a maximum of 1 mg.

If not responsive to therapy or if there is obvious acute laryngeal edema, seek appropriate assistance (e.g., cardiopulmonary arrest response team).

Bronchospasm

1. Give O₂ 6 to 10 liters/min (via mask).
Monitor: electrocardiogram, O₂ saturation (pulse oximeter), and blood pressure.
2. Give beta-agonist inhalers (bronchiolar dilators, such as metaproterenol [Alupent[®]], terbutaline [Brethaire[®]], or albuterol [Proventil[®] or Ventolin[®]]) 2 to 3 puffs; repeat as necessary. If unresponsive to inhalers, use SC, IM, or IV epinephrine.
3. Give epinephrine SC or IM (1:1,000) 0.1 to 0.3 ml (=0.1 to 0.3 mg) or, especially if hypotension evident, epinephrine (1:10,000) slowly IV 1 to 3 ml (=0.1 to 0.3 mg).
Repeat as needed up to a maximum of 1 mg.

Call for assistance (e.g., cardiopulmonary arrest response team) for severe bronchospasm or if O₂ saturation < 88% persists.

Hypotension with Tachycardia

1. Legs elevated 60 degrees or more (preferred) or Trendelenburg position.
2. Monitor: electrocardiogram, pulse oximeter, blood pressure.
3. Give O₂ 6 to 10 liters/min (via mask).
4. Rapid intravenous administration of large volumes of Ringer's lactate or normal saline.

If poorly responsive: epinephrine (1:10,000) slowly IV 1 ml (=0.1 mg)
Repeat as needed up to a maximum of 1 mg

If still poorly responsive seek appropriate assistance (e.g., cardiopulmonary arrest response team).

Hypotension with Bradycardia (Vagal Reaction)

1. Secure airway: give O₂ 6 to 10 liters/min (via mask)
2. Monitor vital signs.
3. Legs elevated 60 degrees or more (preferred) or Trendelenburg position.
4. Secure IV access: rapid administration of Ringer's lactate or normal saline.
5. Give atropine 0.6 to 1 mg IV slowly if patient does not respond quickly to steps 2 to 4.
6. Repeat atropine up to a total dose of 0.04 mg/kg (2 to 3 mg) in adult.
7. Ensure complete resolution of hypotension and bradycardia prior to discharge.

Hypertension, Severe

1. Give O₂ 6 to 10 liters/min (via mask).
2. Monitor electrocardiogram, pulse oximeter, blood pressure.
3. Give nitroglycerine 0.4 mg tablet, sublingual (may repeat x 3); *or*, topical 2% ointment, apply 1 inch strip.
4. If no response, consider labetalol 20 mg IV, then 20 to 80 mg IV every 10 minutes up to 300 mg.
5. Transfer to intensive care unit or emergency department.
6. For pheochromocytoma: phentolamine 5 mg IV. (may use labetalol if phentolamine is not available)

Seizures or Convulsions

1. Give O₂ 6 to 10 liters/min (via mask).
2. Consider diazepam (Valium[®]) 5 mg IV (or more, as appropriate) or midazolam (Versed[®]) 0.5 to 1 mg IV.
3. If longer effect needed, obtain consultation; consider phenytoin (Dilantin[®]) infusion – 15 to 18 mg/kg at 50 mg/min.
4. Careful monitoring of vital signs required, particularly of pO₂ because of risk to respiratory depression with benzodiazepine administration.
5. Consider using cardiopulmonary arrest response team for intubation if needed.

Pulmonary Edema

1. Give O₂ 6 to 10 liters/min (via mask).
2. Elevate torso.
3. Give diuretics: furosemide (Lasix[®]) 20 to 40 mg IV, slow push.
4. Consider giving morphine (1 to 3 mg IV).
5. Transfer to intensive care unit or emergency department.

Abbreviations: IM= intramuscular
IV=intravenous
SC=subcutaneous
PO=orally