

# Diversified Radiology of Colorado Protocol for Radiologists - Contrast Medium Reactions, Recognition and Treatment

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## **Mild Symptoms**

Patient should be observed for the progression or evolution of a more severe reaction, which requires treatment:

Scattered Urticaria	Diaphoresis	Nausea	Pruritus	Coughing
Brief retching and/or vomiting		Rhinorrhea	Dizziness	

## **Moderate Symptoms/Severe Symptoms**

- **Persistent Vomiting**
- **Diffuse Urticaria**
  - Symptoms mild or moderate: Diphenhydramine 50 mg may be administered orally, intramuscularly, or intravenously.
  - Severe: Treatment is as above; consider adding Cimetidine 300 mg by slow intravenous injection or Ranitidine 50 mg by slow intravenous injection.
- **Laryngeal edema**
  - Mild to moderate: Treatment includes oxygen 10-12 L by face mask and epinephrine 1:1000 0.1-0.3 mL given subcutaneously, repeated every 10-15 minutes as needed until 1 mL is administered.
  - Moderate to severe: **Consider calling a code** or intubating the patient. Consider adding Diphenhydramine 50 mg slow intravenous injection.
- **Bronchospasm**
  - Mild: Treatment includes oxygen 10-12 L by face mask, close observation, and/or 2 puffs of an Albuterol or Metaproterenol inhaler.
  - Moderate, without hypotension: Treatment is as above, with Epinephrine 1:1000, 0.1-0.3 mL given subcutaneously, repeated every 10-15 minutes as needed until 1 mL is administered.
  - Severe: Administer Epinephrine 1:10,000 1 mL slow intravenous injection over approximately 5 minutes, repeated every 5-10 minutes as needed.
- **Isolated hypotension**
  - Raise the patient's legs as much as possible while preparing to administer intravenous fluids.
  - The Trendelenburg position can also be effective if the radiographic table can tilt.
  - Oxygen should be administered in high doses.

- **Hypotension with tachycardia**
  - Mild to moderate: Elevate the patient's legs. Administer oxygen 10-12 L by face mask, and intravenous isotonic fluid (e.g., 0.9% isotonic sodium chloride solution, Ringer lactate solution).
  - Severe or unresponsive: Treatment is as above, with dopamine 2-20 mcg/kg/min. **Call a code if no response occurs.**
  
- **Vasovagal reaction**
  - Mild to moderate reaction: Elevate the patient's legs. Administer oxygen 10-12 L by face mask, and intravenous isotonic fluid (e.g., 0.9% isotonic sodium chloride solution, Ringer lactate solution).
  - Severe reaction or unresponsive patient: Administer intravenous atropine 0.6-1 mg, repeated every 3-5 minutes as needed until a total of 3 mg is administered.
  
- **Unresponsive patient**
  - **Call a code.**
  - **Defibrillation may be needed to treat ventricular fibrillation and pulseless ventricular tachycardia.**
  - **Administer basic life support.**

#### References

1. Nasir H Siddiqu, MD, Contrast Medium Reactions, Recognition and Treatment, August 24, 2009, eMedicine Radiology, [www.emedicine.com/article/422855-overview](http://www.emedicine.com/rad/article/422855-overview)

**Update 04/06/10**