

**DEPARTMENT OF RADIOLOGY**

**PRE-MEDIATION PROTOCOLS FOR PATIENTS WITH PRIOR HISTORY OF REACTIONS TO RADIOGRAPHIC CONTRAST MEDIA**

**Who needs pre medication:** Patients with a prior allergic-like reaction to iodinated contrast for CT, IVP, IR, fluoroscopic gastrointestinal, arthrographic or myelographic studies, or gadolinium contrast for MRI, who will again receive the same class of contrast (IV, oral, or rectal, intra-articular or intrathecal).

**There is no cross reactivity between Gadolinium and Iodinated contrast agents, nor between these agents and shellfish or other seafood.**

A previous allergic-like reaction to one of these contrast classes does not necessitate premedication for the other class, nor does an allergy to shellfish/seafood necessitate premedication for contrast.

Allergic-like reactions to contrast media manifest similar to allergic reactions to other drugs and allergens, though are differentiated by the lack of a true allergen-antibody response, hence the semantic difference.

Mild allergic-like reactions: limited urticarial/pruritus; limited cutaneous edema; limited “itchy/scratchy” throat; nasal congestion, sneezing/conjunctivitis/rhinorrhea.

Moderate allergic-like reactions: diffuse urticarial/pruritus; diffuse erythema, stable vital signs; facial edema without dyspnea; throat tightness or hoarseness without dyspnea; wheezing/bronchospasm with mild or no hypoxia.

Severe allergic-like reactions: diffuse edema, or facial edema with dyspnea; diffuse erythema with hypotension; laryngeal edema with stridor and/or hypoxia; wheezing/bronchospasm with significant hypoxia; anaphylactic shock (hypotension + tachycardia).

**History of severe allergic-like reaction warrants discussion of risks vs. benefits of the examination by a radiologist with the ordering provider prior to approval.**

**Physiologic reactions are not allergic and are not indications for corticosteroid premedication.**

Mild physimited nausea/vomiting; transient flushing/warmth/chills; headache/dizziness/anxiety/altered tas ologic reactions: li te/ mild hypertension; vasovagal reaction that resolves spontaneously.

Moderate physiologic reactions: protracted nausea/vomiting; hypertensive urgency; limited chest pain; vasovagal reaction that requires and is responsive to treatment.

Severe physiologic reactions: arrhythmia; convulsions/seizures; hypertensive emergency; vasovagal reaction resistant to treatment.

**History of severe physiologic reaction warrants discussion of risks vs. benefits of the examination by a radiologist with the ordering provider prior to approval.**

**PREMEDICATION REGIMENS**

(Per ACR guidelines, ACR Manual on Contrast Media v. 10.2, 2016)

**ROUTINE PREMEDICATION**

**Two frequently used, equivalent regimens\*\*:**

1. **Prednisone** – 50 mg by mouth at 13 hours, 7 hours, and 1 hour before contrast media injection.
2. **Benadryl** – 50 mg intravenously, intramuscularly, or by mouth 1 hour before contrast medium.

or

1. **Methylprednisolone** (Medrol®) – 32 mg by mouth 12 hours and 2 hours before contrast media injection.
2. **Benadryl** – 50 mg intravenously, intramuscularly, or by mouth 1 hour before contrast medium.

(If the patient is unable to take oral medication, 200 mg of hydrocortisone IV may be

substituted for oral prednisone.)

**EMERGENT PREMEDICATION**

**Discuss risks and alternatives (i.e., non-contrast study) with referring provider and patient.**

**Note:** IV steroids have not been shown to be effective when administered less than 4 to 6 hours prior to contrast injection.

Rapid preps have not been shown to definitively decrease the chances of a serious contrast reaction, but nonetheless are advisable for any patient with a prior allergic like reaction to contrast and a medical need for more emergent imaging.

Acceptability of an emergent pre-medication is the discretion of the attending radiologist, in conjunction with the ordering provider pending discussion of risk-benefit analysis including specifics of the prior contrast reaction and the current clinical status of the patient

**Two regimens, in decreasing order of desirability\*\*:**

* 1. **Methylprednisolone sodium succinate** (Solu-Medrol®) 40 mg or hydrocortisone sodium succinate (Solu-Cortef®) 200 mg intravenously every 4 hours (q4h) until contrast study required.

**Benadryl** - 50 mg IV 1 hour prior to contrast injection.

or

* 1. **Dexamethasone sodium sulfate** (Decadron®) 7.5 mg or betamethasone 6.0 mg intravenously q4h until contrast study required (in patent with known allergy to methylprednisolone, aspirin, or non-steroidal anti-inflammatory drugs, especially if asthmatic)

**Benadryl** - 50 mg IV 1 hour prior to contrast injection.

Allergy or other intolerance to Benadryl is extraordinarily rare and no guideline or standard of care exists. The risk-benefit analysis of the examination should be discussed by a radiologist with the referring provider.

No peer reviewed analyses of alternative antihistamines for this purpose are available, although Allegra 180 mg PO is listed by the ACR as an alternative treatment for mild and moderate hives in adults and has been used in prophylaxis.

**PEDIATRIC PREMEDICATION**

**Prednisone** 0.5-0.7mg/kg PO (up to 50mg) at 13, 7 and 1 hours prior to contrast.

**Benadryl** 1.25mg/kg PO (up to 50mg) at 1 hour prior to contrast.

\*\*Alternative strategies for premedication with Benadryl and corticosteroid may be utilized, though the above regimens have the strongest evidence and/or guideline based support.

**WINDOW FOR TIMING OF SCAN**

Due to real world constraints, it is typically not possible to scan a patient exactly one hour after their last dose of pretreatment medications. Therefore, contrast may be administered any time between 1 and 4 hours after the final administration of pretreatment medications. If there is a delay of greater than 4 hours, the supervising radiologist should be contacted.