# Premedication for Possible Contrast Reaction in Radiology and Treatment for Contrast Related Anaphylaxis

**Medical Imaging of Fredericksburg, LLC**

Level: Facility – Entity Specific

This policy is adopted for all applicable Medical Imaging of Fredericksburg (MIF) locations including Medical Imaging of Fredericksburg, Medical Imaging at Lee's Hill, Medical Imaging at North Stafford and Imaging Center for Women.

**Objectives:**

To establish criteria for premedicating patients with possible allergy to contrast media and recommendations for treatment of contrast related anaphylaxis in accordance with the American College of Radiology (ACR).

**Content:**

Premedication Criteria

Any patient who has a history of a convincing severe allergic reaction should be considered for premedication. The nature of any previous contrast reaction will be assessed and documented during scheduling and check-in prior to performing the imaging procedure.

All patients who have had prior allergic-like reactions to iodinated contrast material:

1. Patients who have only had vasovagal reactions, nausea, vomiting, or contrast induced renal dysfunction are not considered to have had previous allergic-like reactions and DO NOT require premedication.
2. Patients who have had previous mild allergic-like reactions, such as hives, nasal congestion, itching, mild shortness of breath should have their CT performed at Medical Imaging Fredericksburg facility located on the Mary Washington Hospital (MWH) campus or at the Medical Imaging of Fredericksburg at Lee's Hill (MILH) facility.
3. Patients who have had more severe shortness of breath, or an anaphylactic response will be directed to have a discussion with a Radiologist prior to their CT study being scheduled to see if an alternative test could be performed. After the consult with the Radiologist, if the patient decides to proceed with the CT study, it should be performed only at MWH or MILH.
4. Patients that require steroid/diphenhydramine (Benadryl) prep, **will need to arrange for a driver/transportation to and from their appointment**, due to the possibility of drowsiness from the required medication.

Pre-Medication Recommendations

1. During scheduling, patients are asked about prior iodine/contrast allergies. These patients will be referred to his/her primary care/referring physician so they may prescribe the premedication(s) regimen prior to the appointment.

2. During check-in, the technologist confirms that premedication has occurred as prescribed and documents this in the electronic medical record. Any variances are brought to the attention of the Radiologist prior to beginning the patient's contrast injection.
3. The examination of patients who have had prior allergic-like reactions to iodinated contrast material will be performed using non-ionic contrast even if pre-medicated.

Premedication Prescription Protocol

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|---|---|---|
| 150mg<br>TOTAL **PREDNISONE** | **OR** | 64mg TOTAL<br>**SOLUMEDROL** (METHYLPREDNISOLONE) |
| 50mg 13 hours prior to exam time<br>50mg 7 hours prior to exam time<br>50mg 1 hour prior to exam time | | 32mg 12 hours prior to exam time<br>32mg 2 hours prior to exam time |
| 50mg **BENADRYL** (DIPHENHYDRAMINE) BY MOUTH<br>50mg 1 hour prior to exam time | | |
| **** ALTERNATIVE TO BENADRYL IF ALLERGIC<br>100mg **ATARAX** (HYDROXYZINE)<br>100mg 1 hour prior to exam time | | |
| Please arrange for transportation to and from CT appointment due to drowsiness possibility from medication | | |

Reference: ACR Manual on Contrast Media.

Treatment of Contrast Related Anaphylaxis

1. Anaphylaxis is an acute life-threatening reaction, usually mediated by an immunologic mechanism that results from the sudden systemic release of mast cells and basophil mediators.
2. It has varied clinical presentations, but respiratory compromise and cardiovascular collapse are of highest concern because they are the most frequent causes of fatalities.
3. Urticaria and angioedema are the most common manifestations of anaphylaxis but might be delayed or absent in rapidly progressive anaphylaxis. Anaphylaxis often produces signs and symptoms within minutes of exposure to an offending stimulus, but some reactions might develop later (e.g., greater than 30 minutes after exposure).
4. An anaphylaxis kit (sealed security bag) is available in the CT department which include:
   a. Epi-Pen 0.3 mg IM (two)
   b. Epi-Pen 0.15 mg Jr. IM (two)
   c. Diphenhydramine 50 mg/mL 1 mL vial
   d. 5 mL and 3 mL Syringe
5. The anaphylaxis kit integrity will be verified daily to include expiration date validation. MIF does not bill for any anaphylaxis kit items used during emergency responses.
6. Reaction and interventions are documented in the patient's medical record. A SAFE report is completed.

Treatment Recommendations – ADULT

**Due to variations in sequence and performance, recommendations are subject to physician discretion. These medications are at the direction of/order of the physician.**

1. Assess airway, breathing, circulation, and level of consciousness (altered mentation might suggest the presence of hypoxia).
2. Administer epinephrine per physician order. Aqueous epinephrine 1:1000 dilution (1mg/mL), given as EpiPen 0.3 mg intramuscularly every 5 minutes, as necessary, to control symptoms and increase blood pressure.
3. Consider a normal saline intravenous line for fluid replacement and venous access.
4. Consider diphenhydramine, 1 to 2 mg/kg or 25 to 50mg per dose (parenterally). Note: H1 antihistamines are considered second-line therapy to epinephrine and should never be administered alone in the treatment of anaphylaxis.
5. Call 911 for transfer to Emergency department as appropriate

Treatment Recommendations – PEDIATRICS

**Due to variations in sequence and performance, recommendations are subject to physician discretion. These medications are at the direction of/order of the physician.**

1. Assess airway, breathing, circulation, and level of consciousness (altered mentation might suggest the presence of hypoxia).
2. Administer epinephrine per physician order. Aqueous epinephrine 1:1000 dilution (1mg/mL) 0.01mg/kg/dose (0.01 mL/kg/dose) in children, maximum 0.5 mg dosage, intramuscularly every 5 minutes, as necessary, should be used to control symptoms and increase blood pressure.
   **For patients 10-25kg: May use epinephrine auto-injector (EpiPen Jr.) 0.15mg IM
   **For patients >25kg: May use epinephrine auto-injector (EpiPen) 0.3mg IM
3. Consider a normal saline intravenous line for fluid replacement and venous access. Administer 20mL/kg bolus rapid push; repeat to a total maximum of 60 mL/kg as needed for hypotension.
4. Consider Albuterol for bronchospasm resistant to IM epinephrine. Give albuterol 2.5-5mg (approx. 0.15mg/kg/dose) in 3 mL saline inhaled via nebulizer; repeat as needed. ***Note: Albuterol should always be used as an adjunctive treatment to epinephrine and should never be administered alone in the treatment of anaphylaxis.
5. Consider diphenhydramine, 1.25mg/kg/dose (Max = 50 mg/dose) IV (parenterally). Note: H1 antihistamines are considered second-line therapy to epinephrine and should never be administered alone in the treatment of anaphylaxis.
6. Call 911 for transfer to the Emergency Department.

Education and Training

Radiology personnel are trained upon hire, annually and as needed with any change in device operation.

**Approved:** 1/20

**Reviewed:**

**Revised:** 7/21

**Signature(s):** _____

Vice President, Ambulatory Services, MWHC

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Medical Director, MIF