

Premedication Policy and Protocols

Necessity to premedicate for intravenous contrast administration based upon prior reactions

SCENARIO 1. Previous reaction to allergen other than IV contrast (e.g., shellfish, peanuts, medications, etc.):

Mild Reaction	NONE (i.e., no premedication)
Moderate Reaction	NONE
Severe Reaction	NONE

SCENARIO 2. Previous reaction to **DIFFERENT** class of contrast agent to be administered:

Mild Reaction	NONE
Moderate Reaction	NONE
Severe Reaction	NONE

SCENARIO 3. Previous reaction to **SAME** class of contrast agent to be administered:

Mild Reaction	NONE
Moderate Reaction	PREMEDICATE and use different contrast agent
Severe Reaction	DO NOT GIVE CONTRAST*

*Unless in the opinion of the responsible health care professional and supervising radiologist, the potential benefits outweigh the risks i.e. emergency situations. In these instances, specific indications and reason(s) for exception should be documented in the report and the emergency health care provider must be present at the time of contrast administration and during post-contrast transport/monitoring.

Protocols for standard and "accelerated" premedication are detailed below.

Reaction Definitions:

<u>Mild Reactions</u>	<u>Moderate Reactions</u>	<u>Severe Reactions</u>
Nausea, Vomiting	Rash, hives	Convulsions
Cough	Swelling: Eyes, Face	Severe/Rapid Laryngeal Edma
Warmth, Flushing	Diffuse erythema	Unresponsiveness
Headache, Dizziness	Tachycardia	Cardiopulmonary Arrest
Shaking	Bradycardia	Profound Hypotension

Altered Taste	Hypertension	Clinically Manifest Arrhythmias
Itching	Mild Hypotension	
Pallor	Dyspnea	
Sweats, Chills	Bronchospasm, Wheezing	
Nasal congestion, stuffiness	Mild Laryngeal Edema	
Anxiety		

STANDARD Premedication (12- or 13-hour oral premedication):

OPTION 1. Prednisone-based: 50 mg prednisone by mouth at 13 hours, 7 hours, and 1 hour before contrast medium administration, plus 50 mg diphenhydramine intravenously, intramuscularly, or by mouth 1 hour before contrast medium administration.

OR

OPTION 2. Methylprednisolone-based: 32 mg methylprednisolone by mouth 12 hours and 2 hours before contrast medium administration. 50 mg diphenhydramine may be added as in option 1.

ACCELERATED Premedication:

In extenuating circumstances, where an emergency department patient with previous moderate or severe reaction to IV contrast needs a procedure with IV contrast and time will not permit a routine 12-13 hour pre-medication protocol, an accelerated pre-medication protocol may be considered. The accelerated pre-medication protocol is NOT intended for inpatient exams or outpatient studies.

Steps:

1. Technologist obtains patient history and determines the patient has had a previous severe reaction to IV contrast and the patient has not been pre-medicated using the standard protocol.
2. The technologist alerts the supervising radiologist of patient's previous reaction.
3. The supervising radiologist contacts the referring physician to discuss the benefits and risks of proceeding with IV contrast that may include using an accelerated IV Premedication protocol.
4. In cases where the Accelerated IV Premedication protocol is being used for patients from the Emergency Department, the ED physician will be in attendance in the CT scan control room during the injection and will closely monitor the patient after contrast administration for any delayed reactions.

OPTIONS for Accelerated IV Premedication (in decreasing order of desirability):

OPTION 1. Methylprednisolone sodium succinate (e.g., Solu-Medrol®) 40 mg IV or hydrocortisone sodium succinate (e.g., Solu-Cortef®) 200 mg IV immediately, and then every 4 hours until contrast medium administration, plus diphenhydramine 50 mg IV 1 hour before contrast medium administration. This regimen usually is 4-5 hours in duration.

OPTION 2. Dexamethasone sodium sulfate (e.g., Decadron®) 7.5 mg IV immediately, and then every 4 hours until contrast medium administration, plus diphenhydramine 50 mg IV 1 hour before contrast medium administration. This regimen may be useful in patients with an allergy to methylprednisolone and is also usually 4-5 hours in duration.

OPTION 3. Methylprednisolone sodium succinate (e.g., Solu-Medrol®) 40 mg IV or hydrocortisone sodium succinate (e.g., Solu-Cortef®) 200 mg IV, plus diphenhydramine 50 mg IV, each 1 hour before contrast medium administration. This regimen, and all other regimens with a duration less than 4-5 hours, has no evidence of efficacy. It may be considered in emergent situations when there are no alternatives.

Note: Premedication regimens less than 4-5 hours in duration (oral or IV) have not been shown to be effective. The accelerated 4-5-hour regimen listed as Accelerated IV Method 1 is supported by a case series and by a retrospective cohort study with 828 subjects [Jacobs JE, Birnbaum BA, Langlotz CP. Contrast media reactions and extravasation: relationship to intravenous injection rates. *Radiology*. 1998;209(2):411-416.].

Official ACR guidelines 2018 (https://www.acr.org/-/media/ACR/Files/Clinical-Resources/Contrast_Media.pdf).