MIR Guidelines Regarding Pre-Treatment of Patients Undergoing Contrast-Enhanced MRI

1. At the time of scheduling, it should be determined if the patient has had a prior reaction to either gadolinium-based (MR) or iodinated contrast agents.
   a. If there is no history of a prior reaction, then no pre-treatment is needed.
   b. If the patient has had a prior reaction to an MR contrast agent, it should be determined whether the reaction required treatment from a nurse or physician, either at the scanner or elsewhere.
      i. If it was a mild reaction that did not require treatment, no pre-treatment is necessary.
      ii. If the previous reaction required treatment of any type:
          -The patient should be pretreated with corticosteroids prior to undergoing a contrast enhanced MRI examination.
          -A different MR contrast agent should be used, provided the original offending agent is known. In addition, gadobenate dimeglumine (Multihance) should be avoided.
   c. If the patient has had a prior reaction to an iodinated contrast agent, no premedication is necessary. While there are studies that have shown that patients with an allergy to iodinated contrast agents have an increased risk of reactions to gadolinium based contrast agents, there is no proven cross reactivity between iodinated and gadolinium based contrast agents. Furthermore, patients with asthma and various other allergies, including to medications and foods, are also at similar and greater risk. Thus, the increased incidence of reactions to gadolinium based agents in patients with iodinated contrast allergies may be related to increased atopy in these patients, and is not known to be related to a link between iodinated and gadolinium based contrast agents, per se. The ACR Manual on Contrast Media\(^1\) does not recommend premedicating patients who are to receive gadolinium based contrast agents who have a previous allergy to iodinated based contrast agents. In addition, Murphy et al.\(^2\) found that only 3 of 56 centers they surveyed premedicated patients for contrast enhanced MR exams who had an allergy to iodinated contrast. Finally, our communications with other academic centers have shown that the overwhelming majority of centers do not premedicate patients with iodinated contrast allergies prior to receiving MR contrast agents.

2. Any patient with a history of asthma should be instructed to bring an inhaler with them to their MR examination. These patients do not require corticosteroids, special scheduling, or special physician monitoring.

3. Pre-treatment regimen
   a. Oral regimen: Prednisone 50 mg PO QID beginning the day before the scheduled MR examination and continuing up to the time of the examination. Diphenhydramine (Benedryl) 50 mg PO can also be administered at the discretion of the referring physician or responsible
radiologist one hour before the MR examination. If diphenhydramine is administered to outpatients, there should be someone available to drive them home after the examination.

b. Intravenous regimen: Hydrocortisone (Solu Cortef) 250 mg IV stat injected over 30-60 sec. The MR examination should be conducted no less than one hour and no more than four hours after the initiation of IV Hydrocortisone. Diphenhydramine 50 mg IV can also be administered one hour before the examination if time permits. The IV regimen should only replace the oral regimen in rare circumstances and should not be used in the evenings or on weekends. It should be used at the discretion of the responsible radiologist for patients who would be greatly inconvenienced by rescheduling of the MR examination (e.g., patients who live a great distance from the hospital). Potential risk/benefit should be discussed with the referring physician and patient by a radiologist prior to administration. If Benadryl is administered to outpatients, there should be someone available to drive them home after the examination.

4. Radiologist responsibilities:

If a patient arrives for an MRI exam and a history of allergy to gadolinium contrast agents is elicited, if premedication has not been arranged, then a radiology consultation will be triggered. A radiologist will discuss with the patient the risk/benefit of rescheduling and/or premedication, and will also discuss this with the referring physician. If the referring physician is not available for consultation at the time of the radiology exam (i.e. after hours and weekends), then the physician’s office will be contacted the next business day.

References: