MRI Contrast Administration Guideline

The purpose of this guideline is to define MRG's recommendations for screening patients prior to any gadolinium-based contrast agent (GBCA) administration and recommended use of GBCAs based on eGFR results.

Scope

This guideline applies to all MRI exams where patients are scheduled to receive GBCAs. A copy of this Guideline will be distributed to the contracted sites for reference.

Guideline

- **Inpatients**
  - For ***all*** inpatients, a serum creatinine level should be obtained within two days prior to any GBCA administration for MRI exam.

- **Outpatients/ED patients**
  - All outpatients/ED patients which are positive for any of the following risk factors are considered at risk for renal impairment and must have a serum creatinine drawn and a GFR calculated prior to receiving GBCAs.
    - History of renal disease, including:
      - Kidney transplant
      - Solitary kidney
      - Previous kidney surgery
      - History of known cancer involving the kidney(s)
    - History of hypertension requiring medical therapy
    - History of diabetes mellitus

Evaluation of eGFR in Outpatients/ED patients:

Patient History	Risk Factors Present	eGFR Requirement
On Dialysis	N/A	No eGFR required
No prior eGFR at time of MR exam is scheduled	NO risk factors	No eGFR required
	WITH risk factors	Obtain eGFR within 2 days prior to MRI exam
Most recent prior eGFR of 45 or above	NO risk factors and eGFR of 60 or above	No new eGFR required
	WITH risk factors and/or eGFR 45-59	If eGFR is within 6 weeks, no new eGFR required
		If eGFR older than 6 weeks, obtain eGFR within 2 days prior to MRI exam
Most recent prior eGFR of 44 or below	N/A	Obtain eGFR within 2 days prior to MRI exam

Recommendations for use of GBCAs based on eGFR results:

eGFR > 60 ml/min	eGFR 30 – 59 ml/min	eGFR < 30 ml/min
Use full recommended dose. No contraindications to the use of GBCAs.	Use full recommended dose. No special precautions required.	GBCA should be avoided in these patients. If GBCA enhanced MRI is deemed essential by radiologists, use the lowest possible dose needed to obtain a diagnostic study.

Other Considerations for GBCA administration:

- **Patients on Dialysis**

  ACR Recommendation: The ACR Committee on Drugs and Contrast Media also recommends that elective GBCA-enhanced MRI examinations be performed as closely before hemodialysis as is possible, as prompt postprocedural hemodialysis, although unproven to date, may reduce the likelihood that NSF will develop.

- **Pregnant Patients**

  ACR recommendation: The ACR Committee on Drugs and Contrast Media recommends the following concerning the performance of contrast-enhanced MRI examinations in pregnant patients:

  Each case should be reviewed carefully by members of the clinical and radiology service groups, and a GBCA should be administered only when there is a potential significant benefit to the patient or fetus that outweighs the possible but unknown risk of fetal exposure to free gadolinium ions.

  A. The radiologist should confer with the referring physician and document the following in the radiology report or the patient's medical record:
     1. That information requested from the MRI study cannot be acquired without the use of IV contrast or by using other imaging modalities.
     2. That the information needed affects the care of the patient and/or fetus during the pregnancy.
     3. That the referring physician is of the opinion that it is not prudent to wait to obtain this information until after the patient is no longer pregnant.

  B. It is recommended that informed consent be obtained from the patient after discussion with the referring physician.

- **Breast Feeding Patients**

  ACR recommendation: Because of the very small percentage of gadolinium-based contrast medium that is excreted into the breast milk and absorbed by the infant's gut, we believe that the available data suggest that it is safe for the mother and infant to continue breast-feeding after receiving such an agent.

  Ultimately, an informed decision to temporarily stop breast-feeding should be left up to the mother after these facts are communicated. If the mother remains concerned about any potential ill effects to the infant, she may abstain from breast-feeding from the time of contrast administration for a period of 12 to 24 hours. There is no value to stop breast feeding beyond 24 hours. The mother should be told to express and discard breast milk form both breast after contrast administration until breast feeding resumes. In anticipation of this, she may wish to use a breast pump to obtain milk before the contrast-enhanced study to feed the infant during the 24-hour period following the examination.

This guideline was referenced from the ACR Manual on Contrast Media – Version 10.3, 2017:
https://www.acr.org/~/media/ACR/Documents/PDF/QualitySafety/Resources/Contrast-Manual/Contrast_Media.pdf?la=en.