

CONTRAST & RENAL FUNCTION GUIDELINES

PURPOSE

- To ensure the appropriate and safe use of gadolinium contrast agents according to current ACR guidelines.

GENERAL GUIDELINES/COMMENTS

- All patients who are to receive IV gadolinium contrast must read the Patient Medication Guide and sign the acknowledgement form prior to receiving contrast. The patient's next of kin or power of attorney can do this if the patient is unable to read the guide.
- Patients in acute kidney injury and/or with a low GFR who are to receive gadolinium IV contrast do not need to sign an informed consent form and Nephrology approval is not required. If the patient is on hemodialysis, it is preferred that the patient receive IV contrast soon before the next scheduled dialysis. The dialysis schedule should not be adjusted otherwise.
- Per current research the risk for nephrogenic systemic fibrosis (NSF) when using group II agents (Clariscan, Gadavist, Dotarem, Multihance or Prohance) is sufficiently low to nonexistent. However IV contrast should administered only be used when essential and when CT or US cannot answer the clinical question.
- Group I agents (Omniscan, Magnevist and Optimark) are associated with NSF but are not used at any St. Vincents or Optimal Imaging location.
- Use the 2021 CKD-EPI equation when calculating a GFR from an iStat device. See website https://www.kidney.org/professionals/KDOQI/gfr_calculator. Be sure to click on the pediatric version for patients less than 18 years of age.

PATIENTS RECEIVING CLARISCAN OR GADAVIST

- For patients receiving Clariscan or Gadavist (group II agents), GFR does not need to be checked on any patient regardless of patient history.
- However if a current GFR is available, use the following guidelines:
 - >30 mL/min – Use weight-based contrast (unless protocol calls for a specific dose).
 - <30 mL/min – Use weight-based contrast (unless protocol calls for a specific dose) only after approval by a radiologist.

PATIENTS RECEIVING EOVI

- For patients receiving Eovist (group III agent), GFR must be checked within 24 hours only for the following patients:
 - History of renal disease – including remote AKI, current CKD, prior/current dialysis, renal transplant, kidney surgery (total/partial nephrectomy or tumor ablation), ureteral stent / nephrostomy placement, single kidney, renal cancer.
 - Diabetes mellitus (whether or not requiring medication).
- Use the following GFR guidelines:
 - ≥30 mL/min – Use 10 mL Eovist per protocol.
 - <30 mL/min – Do not use Eovist unless approved by a radiologist.

MR CONTRAST AGENT DOSES FOR ADULTS

- **IV Contrast**
 - Clarisan/Dotarem – per weight-based protocol - 0.2 mL/kg up to 20 mL unless otherwise specified in a specific protocol.
 - Gadavist – per weight-based protocol - 0.1 mL/kg up to 10 mL unless otherwise specified in a specific protocol.
 - Multihance – per weight-based protocol - 0.2 mL/kg up to 20 mL unless otherwise specified in a specific protocol.
 - Eovist – 10 mL regardless of patient weight.
 - Feraheme – per weight-based protocol - 2 mg/kg iron (up to 510 mg iron or 1 bottle Feraheme) diluted to 60 mL with sterile normal saline. Injected at 2 mL/sec followed by 40 mL saline flush. Feraheme is 30 mg iron per mL (510 mg iron per 17 mL bottle). Pharmacy handles making the contrast dilution using sterile water per USP797.
- **Oral Contrast**
 - Enterography – Oral CitraSelect or Volumen 450 mL bottle - 1 bottle 45 mins, 1 bottle 30 mins and 1 bottle 15 mins prior to exam.
 - Negative Oral Contrast – 450 mL pineapple juice consumed 30 mins prior to MRCP. Or 450 mL pineapple juice consumed 45 mins and another 450 mL consumed 20 mins prior to enterography. Use pineapple juice only if instructed.
- **Bladder Contrast**
 - Rarely used/needed and only with radiologist approval.
 - Contrast dilution is 4 mL Clariscan/Dotarem or 2 mL Gadavist added to 498 mL normal saline.
 - Clamp Foley prior to beginning exam. Fill bladder via Foley under gravity with up to 300 mL contrast mixture. Stop infusing contrast if the patient experiences significant pain. Remember to unclamp the Foley at the end of the exam.

- At St Vincents locations Pharmacy handles making the contrast dilution using sterile normal saline per USP797 requirements.
- Only use sterile normal saline (never use tap water).