Gadolinium Contrast Administration
Radiology of Indiana Recommendations

(Updated by ROI protocol committee on 12.19.2024)

Overview

1. Gadolinium-based contrast agents (GBCAs) should only be administered in patients with impaired renal function when deemed necessary by the radiologist and ordering clinician.
2. Routine screening and laboratory testing for renal failure is no longer required prior to the administration of group II agents (which includes all agents currently used at all ROI sites).
3. If a patient presents with known renal failure, the necessity of GBCAs should be discussed with the radiologist and ordering clinician.
4. If a group II agent is used in the setting of dialysis, the examination should be performed as closely before a regularly scheduled hemodialysis as is possible, as dialysis can improve GBCM clearance. However, dialysis should not be initiated or altered (i.e. daily dialysis or multiple per-day dialysis sessions).

Update:

In accordance with the ACR Manual on Contrast Media 2024, the following changes to the MR contrast administration algorithm are submitted.

- When Gadovist (or other Group II agents) is administered, assessment of renal function with laboratory testing (including eGFR) does not need to be performed.

    - "Based on the most recent scientific and clinical evidence [30-37] the ACR Committee on Drugs and Contrast Media considers the risk of NSF among patients exposed to standard or lower than standard doses of group II GBCAs is sufficiently low or possibly nonexistent such that assessment of renal function with a questionnaire or laboratory testing is optional prior to intravenous administration. As in all instances, group II GBCAs should only be administered if they are deemed necessary by the supervising radiologist, and the lowest dose needed for diagnosis should be used as deemed necessary by the supervising radiologist."

- When using a Group II agent, dialysis should be performed as closely before a regularly scheduled hemodialysis as possible.

    - When using a group II agent, the risk of NSF is extremely low. The ACR Committee on Drugs and Contrast Media and National Kidney Foundation also recommend that elective GBCA-enhanced MRI examinations be performed as closely before a regularly scheduled hemodialysis as is possible, as dialysis can improve GBCM clearance. However, due to associated increased risk of catheter placement and infection, the possibility of worsening kidney function in patients

with AKI and CKD, the perceived very low risk of NSF from group II and III GBCM agents, dialysis should not be initiated or altered (i.e. daily dialysis or multiple per-day dialysis sessions) [46,47].

Agents:

- Group I: Agents associated with the greatest number of NSF cases:
  - Gadodiamide (Omniscan® – GE Healthcare)
  - Gadopentetate dimeglumine (Magnevist® – Bayer HealthCare Pharmaceuticals)
  - Gadoversetamide (OptiMARK® – Guerbet)

- Group II: Agents associated with few, if any, unconfounded cases of NSF:
  - Gadobutrol (Gadavist® – Bayer HealthCare Pharmaceuticals; Gadovist in many countries)
  - Gadobenate dimeglumine (MultiHance® – Bracco Diagnostics)
  - Gadoterate acid (Dotarem® – Guerbet)
  - Gadoteridol (ProHance® – Bracco Diagnostics)
  - EOVIST/Primovist® (Bayer Healthcare)

- Group III: Agents for which data remains limited regarding NSF risk, but for which few, if any unconfounded cases of NSF have been reported.
  - No agents currently in this category

References:

- ACR Manual on Contrast Media 2024. American College of Radiology Committee on Drugs and Contrast Media. https://www.acr.org/-/media/acr/files/clinical-resources/contrast_media.pdf