

Contrast Agents: Ensuring a Clearer Picture

Contrast agents (similar to dyes) enhance the different rates of x-ray absorption and increase visibility of certain tissues.

When testing the stomach, small bowel and colon, you may be asked to drink a liquid contrast agent.

Other contrast agents may also be administered by intravenous (IV) injection. Patients sometimes feel a flush of heat and a metallic taste in their mouth, both of which typically only last 1-2 minutes.

Some Patients Experience Adverse Reactions

Please inform technologists immediately if you experience any of the following symptoms in order for them to be treated.

- Are allergic to any medications or iodine;
- Have a history of diabetes, asthma, heart condition, kidney problems or thyroid condition;
- Experience any difficulty breathing, itching or hives after receiving the dye (Most of these symptoms present themselves prior to the patient leaving.)
- Become short of breath or experience swelling of the throat. These indicate a more severe reaction to the contrast agent.

Indications to measure Serum Creatinine blood level prior to IV Administration of Iodinated Contrast Media

In accordance with ACR standards and FDA guidelines, a recent creatinine level should be obtained if any of the following questions below are answered YES.

If the patient has a positive history (reference the below questions), and a recent creatinine level cannot be obtained from the patients physician, we provide on-site i-stat testing to ensure the patients' kidneys are able to filter out any contrast agents.

- History of "kidney disease" as an adult, including tumor and transplant.
- Family history of kidney failure.

- Diabetes treated with insulin or other medications for diabetes that are prescribed by a licensed physician.
- Paraproteinemia syndromes or diseases (e.g., myeloma).
- Collagen vascular disease.
- Prior renal surgery.
- Certain medications:
 - Metformin or metformin-containing drug combinations.
 - Nonsteroidal anti-inflammatory drugs.
 - Regular use of nephrotoxic anti-biotics, such as aminoglycosides.

(Routine blood urea nitrogen (BUN) testing may be useful as a reflection of hydration but should not be relied on solely in evaluating renal dysfunction.)

Other patients who are scheduled for a routine intravascular study do not necessarily need a serum creatinine determination before the examination.

These are the indications listed in the latest ACR manual on contrast media - listed in section on contrast induced nephropathy.

Renal Dialysis Patients and the Use of Contrast Media

In patients suffering from end-stage renal disease, the question arises as to the emergent need for dialysis after a contrast media examination. Because contrast agents are not protein-bound and have relatively low molecular weights, they are readily cleared by dialysis. The primary concern about patients who are dialysis-dependent is the osmotic load of the contrast media, although direct chemo toxicity on the heart and blood-brain barrier is also of theoretical concern. Unless there is significant underlying cardiac dysfunction, or very large volumes of contrast media are used, there is no need for urgent dialysis. It is important, however, to limit the dose of contrast used in such patients and to use LOCM or IOCM (rather than HOCM) to reduce the risk of adverse effects of hypertonicity.

Patients with renal insufficiency who require only intermittent or occasional dialysis are at substantial risk for contrast media-induced nephrotoxicity with further permanent worsening of their renal function. Alternative imaging studies that do not require contrast media should be considered.