

## **Benefits and Risks of Iodinated Intravenous Contrast Material for Radiological Procedures**

The benefits of iodinated IV contrast material for CT examinations are numerous. Certain studies, i.e., vascular studies, to assess the aorta or pulmonary arteries can not be performed without contrast. IV contrast has been shown to be necessary in oncology imaging as well as patients with trauma and acute abdominal pain.

Although they are small, there are some risks to the use of IV contrast. An anaphylactic reaction requiring treatment, which is subcutaneous administration of epinephrine, could be expected to occur in approximately 1 in 10,000 injections. This risk is increased to approximately 1 in 2,000 in asthmatics, patients with food and drug allergies, and in patients with prior reaction to contrast. Interestingly, studies have shown that pre-medication with steroids does not decrease the risk in these patients as long as low osmolar contrast is used, except for patients with prior allergy to contrast. These patients should get pretreated with prednisone. The risk of death is exceedingly low, between 1/100,000 to 1/1,000,000.

More commonly, patients may experience warmth, a metallic taste in their mouth, or nausea. This is related to the osmolarity of the contrast. These are not anaphylactoid and are self limited reactions not requiring treatment. Patients should fast for at least 3 hours prior to the procedure unless it is an absolute emergency.

The risk of contrast induced nephropathy is low. In patients without underlying renal insufficiency or diabetes the risk is almost zero. The risk increases with underlying renal insufficiency, creatinine over 1.7, and diabetic patients. The most important consideration is the hydration state of the patient. Patients should be well hydrated prior to any IV contrast procedure.

Diabetic patients who are on Glucophage should have their medication discontinued for 48 hours beginning at the time of a contrast injection. The creatinine should then be rechecked and if normal the medication can be restated. This is that if a diabetic patient does go into renal insufficiency as a result of contrast, the Glucophage will be metabolized to lactic acid which could prove fatal.

If the medical house staff has any question regarding the use of contrast or its risks, they should contact the radiology resident or fellow on the Bellevue CT rotation at 212-562-3056.