Title		
Contrast Administration - Relative and Absolute Contraindications for Non-ionic iodinated Contrast Material		
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PRESUMES PRACTITIONERS KNOWLEDGE OF: (title)	SPECIAL NOTES
NA	**ABSOLUTE CONTRAINDICATIONS:** NA **EXPOSURE:** NA **PROTECTIVE EQUIPMENT:** NA **PATIENT/FAMILY EDUCATION MATERIALS:** NA **EQUIPMENT:** NA

1.0 PURPOSE

1.1 To provide guidelines determining situations that are considered relative or absolute contraindications for the use of non- ionic iodinated contrast material.

2.0 SCOPE

NA

3.0 RESPONSIBILITIES

NA

4.0 DEFINITIONS

NA

5.0 POLICY / PROCEDURE FOR IODINATED CONTRAST MEDIA

5.1 Non-ionic iodinated contrast material

5.1.1 The following are considered relative or absolute contraindications for the use of iodinated contrast:

5.1.1.1 **Pregnancy:** It is not possible to conclude that contrast agents present a definite risk to the fetus; there is insufficient evidence to conclude that they pose no risk.

5.1.1.2 **Breast Feeding** The available data suggests that it is safe for the mother and infant to continue breast-feeding after receiving iodinated or gadolinium contrast material since a very small percentage of iodinated contrast medium is excreted into the breast milk and absorbed by the infant's gut (less than 0,01% of

iodine contrast and less than 0,0004% of gadolinium of the intravascular dose given to the mother). If the mother remains concerned about any potential ill effect to the infant, she may abstain from breast-feeding for 24 hours with active expressing and discharge of breast pump to obtain milk from both breasts during that period.

5.2 <u>Contrast and Renal Insufficiency</u>:

5.2.1 Nephrotoxicity is attributed to radiologic contrast media when there has been a sudden change in renal status after the administration of contrast medium and no other etiology appears likely from the clinical records.

5.2.2 Predisposing factors for developing contrast media-induced acute renal failure are pre-existing renal insufficiency (serum creatinine level >1.5 mg/dl), diabetes mellitus, dehydration, cardiovascular disease and the use of diuretics, advanced age (>70 years), myeloma, hypertension, and hyperuricemia although the population at highest risk are patients with both diabetes *and* pre-existing renal insufficiency.

5.3 When to Check Renal Function

5.3.1 For all patients with suspected renal dysfunction or those considered at risk for contrast nephrotoxicity, a baseline serum creatinine level should be obtained before the injection of contrast material.

5.3.2 If any of the following criteria are met a serum creatinine with eGFR must be obtained no less than **3 weeks prior** to the procedure.

5.3.2.1 History of “kidney disease” as an adult, including tumor and transplant

5.3.2.2 Family history of kidney diseases like polycystic kidney disease

5.3.2.3 Diabetes treated with insulin or other prescribed hypoglycemic medications

5.3.2.4 Myeloma or other Paraproteinemia syndromes or diseases

5.3.2.5 Lupus and other Collagen vascular diseases

5.3.2.6 Metformin or metformin-containing drug combinations

5.4 Certain medications: *Require Creatinine Measurements **within 24 hours prior** to the procedure.*

5.4.1 Nonsteroidal anti-inflammatory drugs (Cox-1 and Cox-2 Inhibitors) - ***if used for 4 consecutive days*** with the last dose **within 24 hours of the procedure** (comprehensive list on file)

5.4.2 Recent and multiple intravenous doses (2 or more days of therapy) of the nephrotoxic antibiotics amikacin, gentamicin, tobramycin, and vancomycin if last dose given **within 7 days of the procedure**

5.4.3 Recent and multiple intravenous doses (2 or more days of therapy) of the antifungal drug Amphotericin B (not including Ambisome) if last dose given **within 7 days of the procedure**

5.4.4 Nephrotoxic chemotherapeutic drugs;

5.4.4.1 Methotrexate given **within 3 days of procedure**

5.4.4.2 Cisplatin given within 3 weeks of procedure

5.4.4.3 Previous contrast enhanced study within 48 hours

5.5 If renal insufficiency is identified, *the referring clinician should be advised regarding alternative imaging approaches*. Other precautionary recommendations are to increase the interval between contrast media examinations, to reduce the contrast dose, and hydrate the patient.

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

5.7 HOW TO CHECK RENAL FUNCTION

5.8 Serum creatinine has definite limitations as an accurate measure of renal function because it is influenced greatly by the patient's gender, muscle mass, nutritional status, and age. Normal serum creatinine levels are maintained until the glomerular filtration rate (at least as reflected in creatinine clearance) is reduced to nearly 50%; that is, impaired renal function may exist even when serum creatinine levels are "normal".

5.9 SERUM CREATININE AND VOLUME OF CONTRAST

5.10 Renal function is assessed on the basis of serum creatinine (SCr) and estimated glomerular filtration rates (eGFR), which should be estimated using the MDRD equation:

5.10.1 eGFR (mL/min/1.73 m2) = **175** x (Scr)-1.154 x (Age)-0.203 x (0.742 if female) *Footnote: If patient is black, multiply by 1.21*

5.10.2 When eGFR is less than 60 ml/min (in a normal adult) the term “renal insufficiency” has been used, and when eGFR is less than 30 ml/min the term “renal failure” is often used.

5.11 The contrast dose should be adjusted if:

5.11.1 eGFR is between 30-60 ml/min ® reduce the dose by at least 25% recommended

5.11.2 eGFR less 30 ml/min do not inject unless **(a)** patient is on dialysis (the schedule for dialysis does not need to be changed); **(b)**the study is a medical necessity (risks and benefits should be discussed by physicians).

5.12 Documentation of this discussion should be entered into the comments section of the Percipio protocoling portal which will be copied into the finalized report.

BWH Radiology Documentation

Document Number
7.4.2SOP

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REVISION SHEET

DATE	REV	REVIEWED / REVISED / APPROVED	BY
6/20/2006	-	Initial Approval	Pharmacy & Therapeutics Comm.
9/18/2007	-	Annual Reviewed	OSC Comm.
4/28/2008	-	Annual Review	OSC Comm.
6/15/2009		Annual Review	OSC Comm.
7/10/2009	A	Change to New Template	Duncan Phillips
7/16/2009	A	Reviewed	E. Bozadjian