General Reference:
SNMMI Procedure Standard EANM Guideline for Gated Equilibrium Radionuclide Angiography

Common Indications:
Evaluation of LVEF in patients undergoing potentially cardiotoxic chemotherapy, determination of LVEF and wall motion abnormalities in patients with cardiomyopathy or coronary artery disease.

Pre-scan Clinical History:
Determine history related to stated clinical history. Locate any pertinent imaging results which describe related findings.

Patient Preparation:
None

Relative Contraindications (if present, consult with nuclear medicine physician prior to scan):
1. Recent nuclear medicine studies
2. Pregnancy

Radiopharmaceutical and Route of Administration:
25 mCi Tc99m-tagged UltraTag RBCs is preferred; 40-50 mCi NaTcO4 will be required for UltraTag kit
If UltraTag is unavailable, InVivo PYP RBC Labeling may be employed.

Procedure:
1. Start an IV (20g or larger is preferred) and withdrawal 5ml of the patient's blood into a syringe containing 20 units of sodium heparin.
2. In a clean environment, prepare UltraTag RBCs according to the UltraTag package insert. Document the date and procedure in laboratory logs.
3. Reinject 25 mCi Tc99m-tagged RBCs.
4. Lay the patient on the imaging table in the supine position, the left arm raised overhead. Attach three (3) EKG leads to the right chest, left chest, and left flank regions, and connect the leads to the gating apparatus. Ensure the captured EKG is regular in rhythm.
5. Imaging parameters: LEHR, 64x64 matrix, 600 seconds per projection, R/R Interval variance 90%, Allowable Variance 90%, Zoom 1.45.6. For all clinical indications, acquire the LAO projection such that septal separation of RV and LV blood pool activity is optimal. If acquisition is for LVEF determination in patients undergoing chemotherapy, the exam is complete with this single view.
6. For all other indications, acquire additional ANTERIOR and LEFT LATERAL projections, oriented +/- 45° from the oblique angle chosen for the LAO projections. ***If these two projections are acquired with a camera configured into a 90° orientation, and if the two projections are concatenated into a single DICOM series, the series must be separated into two individual dynamic sets, one for ANT, and one for LLAT.***

Review:
Prepare images and documents for clinical review as per **Nuclear Imaging Acquisition and Presentation Guidelines**

Dr. Barr | Date Implemented: 2009 | Date Revised: 3/2024 | Date Reviewed: 3/2024