General Reference:
99mTechnetium-Pyrophosphate Imaging for Transthyretin Cardiac Amyloidosis

Common Indications:
Cardiac disease attributed to TTR (transthyretin) amyloidosis

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:
10 to 20 mCi Tc99m PYP, IV
Occasionally, 10 to 20 mCi Tc99m HDP, IV (***not MDP***) may be substituted if PYP is unavailable

Procedure:
1. Inject the patient with the radiopharmaceutical using an indwelling IV line or butterfly.
    a. At 1 hour post-injection, acquire static ANTERIOR and LAO images, LEHR, 256x256 matrix, 750Kcts, zoom 1.45 for LFOV systems.
    b. At 3 hours post injection, acquire second ANTERIOR and LAO static images (similar parameters)
    c. Immediately thereafter, acquire SPECT/CT (or SPECT only, if SPECT/CT unavailable). Position the top of the field of view at the the shoulders, 128x128 matrix, 80 projections, 20 seconds per stop, no zoom (1.0).

Processing:
Process the 1 and 3 hour ANTERIOR static images to determine **heart/ contralateral lung ratios** according to the above reference:

> *"A circular ROI should be drawn over the heart on the anterior planar images with care to avoid sternal overlap and with size adjusted to maximize coverage of the heart without inclusion of adjacent lung. This ROI (same size) should be mirrored over the contralateral chest without inclusion of the right ventricle, to adjust for background and rib uptake (See Figure 1). The heart and contralateral ROIs should be drawn above the diaphragm."*

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

Dr. Barr | Date Implemented: 2021 | Date Revised: 3/2023 | Date Reviewed: 8/2025