Liver MAA pre Y-90 microspheres

Special Instructions	**Scheduling will be coordinated with Interventional Radiology.** **Imaging must be performed as soon after radiopharmaceutical administration as possible to minimize free pertechnetate and breakdown products.** **To be performed at UNMH only.**

Radiopharmaceutical: Tc-99m MAA

Dose (Adult/Pediatric):   Refer to Nuclear Medicine Dose Chart

Route of Administration: Intra-arterial in Interventional Radiology

Patient Preparation: Per Interventional Radiology requirements. No specific requirements for the nuclear medicine imaging.

Equipment Setup: Collimator (SPECT-CT): High resolution

Computer setup:

Whole-body (anterior/posterior):
- Static acquisition
- 256 x 1024 matrix
- 24 cm/min

SPECT-CT images:
- High resolution collimator
- 128 x 128 matrix
- 180 degrees, CW (clockwise)
- 64 steps, 15 sec/step
- Noncircular, continuous

Patient Positioning: Feet first, supine

Procedure: Imaging time post-injection:
- Immediately after the patient is transferred from Interventional Radiology
- Acquire planar anterior/posterior whole-body images followed by SPECT-CT of the abdomen (to include entire liver).

Processing: Whole-body anterior/posterior: Dual-intensity display

The radiologist will additionally process the planar images to determine the

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pulmonary shunt fraction as follows:
- Counts from lung ROIs (one ROI around both lungs) on anterior and posterior views ($ROI_{antlungs}$ and $ROI_{postlungs}$)
- Counts from ROIs around the liver on anterior and posterior views ($ROI_{antliver}$ and $ROI_{postliver}$)
- Separately calculate geometric mean of lung counts and liver counts:
  - $ROI_{lungs} = [(ROI_{antlungs} \times ROI_{postlungs})]^{1/2}$
  - $ROI_{liver} = [(ROI_{antliver} \times ROI_{postliver})]^{1/2}$

- Pulmonary shunt fraction (percentage of injected activity in lungs) = $ROI_{lungs} \times 100 / (ROI_{lungs} + ROI_{liver})$

SPECT-CT:
- Follow automatic processing workflow
- Process CT in soft tissue (B30) and bone (B60) algorithm
- Should have attenuation corrected and non-attenuation corrected SPECT tomo files
- Produce SPECT-CT fused axial data set

Items Required For Complete Study:

- Processing and transfer of all images to PACS and/or Leonardo as appropriate
  - Raw data of all planar images to PACS
  - Planar: Lightbox/savescreen of planar images to PACS
  - SPECT-CT: Attenuation Corrected and Non Attenuation Corrected Tomo Reconstructions, CT (B30 and B60) to PACS and Leonardo; Fused axial data set to PACS only.
- Complete the examination in RIS