Liver MAA pre Y-90 microspheres

<table>
<thead>
<tr>
<th>Special Instructions</th>
<th>Scheduling will be coordinated with Interventional Radiology.</th>
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<tbody>
<tr>
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<td>Imaging must be performed as soon after radiopharmaceutical</td>
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<td>administration as possible to minimize free pertechnetate and</td>
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<td>breakdown products.</td>
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<td>To be performed at UNMH only.</td>
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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
- **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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Liver MAA pre Y-90 microspheres (continued)

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

  - Pulmonary shunt fraction (percentage of injected activity in lungs)
    \[ = \frac{\text{ROI}_{\text{lungs}} \times 100}{\text{ROI}_{\text{lungs}} + \text{ROI}_{\text{liver}}} \]

**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