General Reference:
Scintigraphy in Suspected Death by Neurologic Criteria (Brain Death) 3.0

Common Indications:
Assessment of cerebral blood flow, as a confirmatory examination in a patient who meets the clinical criteria for brain death related to severe trauma, catastrophic illness, or cardiopulmonary arrest. Lack of sagittal sinus activity during early blood pool images, and lack of cerebral and cerebellar activity in delayed images, is consistent with brain death.

> **Note:** If the examination is to be performed after normal department hours, notify the nuclear medicine physician on duty immediately.

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):
None

Radiopharmaceutical and Route of Administration:
25 mCi Tc-99m Ceretec or Neurolite injected intravenously; if using Ceretec, you must place the included injection filter onto the syringe while injecting. Inject through as little IV tubing as is possible. For weight-based pediatric doses, a minimum of 5 mCi is recommended.

Procedure:
1. Proper positioning of the patient is critical. Ensure the patient's head is completely within the FOV for an anterior/posterior flow.
2. Place a tight tourniquet around the patient's scalp, above the eyes, to restrict blood flow to the scalp.
3. Bolus the radiopharmaceutical injection and immediately acquire a dynamic flow acquisition. ***Timing is critical.*** It is best to start the acquisition and then immediately inject. Ensure the acquisition has started before the patient's head/neck has visualized on the p-scope.
   - Dynamic AP flow, 1 sec/frame x 60 frames, LEHR collimator, 64x64 matrix
   - Twenty minute post injection AP and Lateral Statics - LEHR collimators, 128x128 matrix, 500 kcts

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

Dr. Barr | Date Implemented: 2009 | Date Revised: 11/2018 | Date Reviewed: 6/2025