

Diamox (Acetazolamide) Brain Perfusion SPECT Study (2 day and 1 day protocols)

INDICATIONS:

- To differentiate ischemic areas from infarct and to aid in distinguishing vascular from neuronal causes of dementia.

CONTRAINDICATIONS:

- Do not perform if patient has:
 - Had a stroke in past three days
 - Allergy to sulfonamides
 - Electrolyte disturbances
 - Kidney or liver disease
 - Adrenocortical insufficiency
 - Long-term use in chronic noncongestive angle-closure glaucoma

RADIATION RISK:

- Ensure safe handling to protect patient and healthcare workers from unintentional radiation exposure.

ADVERSE REACTIONS:

- After receiving acetazolamide, 50% of patients will experience numbness around mouth and fingers, lightheadedness or blurred vision, and feeling flushed around face and neck.
- After receiving radiopharmaceutical <1% experience any side effects such as headache, dizziness, seizure, agitation, rash, nausea, syncope, angina, and apnea.

SUPPLY AND STORAGE:

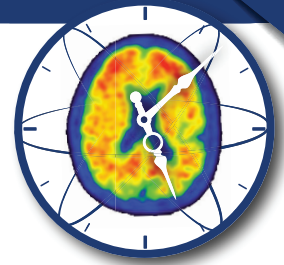
- Acetazolamide:
 - Stored at room temperature. Supplied in vials of 500 mg to be reconstituted with 5 mL of Sterile Water. After reconstitution, store in refrigerator for up to 12 hours.
- Neurolite™ (Tc-99m ECD):
 - Supplied in single use dose by radiopharmacy. Expires 6 hours after preparation.
- Stabilized Ceretec™ (Tc-99m HMPAO):
 - Supplied in single use dose by radiopharmacy. Expires 4 hours after preparation.

PATIENT PREPARATION:

- No special patient preparation. May eat and take medication.

DOSE AND ADMINISTRATION:

- **2 DAY PROTOCOL:**
 - Perform stress first, baseline might not be performed if stress is normal.
 - Day 1: Stress: 555-1110 MBq (15-30 mCi) of Ceretec™ or Neurolite™
 - Establish IV access prior to start of exam.
 - Ask patient to void before starting exam.
 - Place patient supine, head first on scan table, make as comfortable as possible.
 - Make scan room quiet and dim the lights, instruct patient to not speak or move.
 - Attain baseline heartrate and blood pressure.
 - Give 1000 mg of Acetazolamide IV, slowly over 10 minutes.



- Continue to monitor heartrate and blood pressure.
- Give radiopharmaceutical 15-20 minutes after acetazolamide.
- Acquire SPECT images after 30 minute uptake period.
- Day 2: Baseline: 555-1110 MBq (15-30 mCi) of Ceretec™ or Neurolite™
 - Establish IV access prior to start of exam
 - Place patient supine, head first on scan table, make as comfortable as possible.
 - Leave patient in quiet, dimly lit scan room for 30 minutes prior to injection.
 - Inject radiopharmaceutical.
 - Leave patient in same dimly lit, quiet room for additional 30 minutes.
 - Acquire SPECT images.
- **1 DAY PROTOCOL:**
 - Baseline:
 - Establish IV access and have patient void before starting test.
 - Place patient supine, head first on scan table, make as comfortable as possible.
 - Make scan room quiet and dim the lights, instruct patient to not speak or move.
 - Inject radiopharmaceutical.
 - Leave patient in same dimly lit, quiet room for additional 30 minutes.
 - Acquire SPECT images.
 - Stress: *Second dose must be at least twice the amount as the baseline dose.*
 - In same quiet, dimly lit scan room,
 - Attain baseline heartrate and blood pressure.
 - Give 1000 mg of Acetazolamide IV, slowly over 10 minutes.
 - Continue to monitor heartrate and blood pressure.
 - Give radiopharmaceutical 15-20 minutes after acetazolamide.
 - Acquire SPECT images after 30 minute uptake period.
- 6. Imaging Parameters:
 - a.) Uptake Time:
 - 30 minutes after radiopharmaceutical injection
 - b.) Acquisition Parameters:
 - SPECT of brain, approximately 15-20 minutes
 - c.) Patient Positioning:
 - Supine, head first, and centered in the gantry using the head support. Straps and wedges may be used to help stabilize the head to reduce movement.

IMAGE PROCESSING AND DISPLAY:

- Display in all three planes: transverse, coronal, and sagittal.
- Please check with reading physician for any special processing and display requests.

POST EXAM INSTRUCTIONS:

- To minimize radiation exposure, advise the patient to increase their level of hydration before and after receiving the radiopharmaceutical and to void frequently for the following 24 hours.