| University Health™ | Policy #: Rad Proc 13.12.6 |
|---|---|
| SUBJECT: Perfusion Study 1.9 | Effective: 10/1/2013<br>Revised: 7/15/2016 |
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**Purpose: To provide computed tomography staff with the required protocol for performing a CT Perfusion.**

**Scope: All adults patients 18 years and older.**

**Procedure:**
**Clinical Indication**: **Suspected infarct (usually follows a non-contrast study of the brain)**
**Patient Preparation: None**
**Orientation: Head first**
**Breathing: Normal breathing**
**Oral Contrast: None**
**IV Contrast: Per Weight: *If clinically indicated* 1ml/lb or 2ml/kg Visipaque 320 not to exceed 150ml injected @ 3ml/sec**
**Coverage: Base of skull through vertex**
**Anatomic Reference: Orbitomeatal line**
**Scan Delay: See group note below**

**Pertinent information:** Acquire an Axial non-enhanced series of the whole brain. If a CT Angiogram is to be included in the examination, it should be done before the CT Perfusion study. If an abnormality is seen in the CT Angio, define slice range to be consistent with findings.

**Group 1:** Non-contrast of whole brain.

| Scan Mode | Thickness Speed Pitch | Table Interval | SFOV | kVp | Auto mA/ Noise Index | Prep Time (sec) | Recon Type |
|---|---|---|---|---|---|---|---|
| Axial Full 2.0 | 5 2i | 10 | Head | 120 | 140 | 0 | Standard |

Review images and determine slice location at the level of the Basal Ganglia
(Consult the radiologist). This slice is just above the supra cellar cistern where the thalamus, basil ganglion, caudate nucleus can be seen. You must be sure there will be an artery and a vein that can be detected within the slice range.

**Group 2**. Contrast 40cc of 350 or 50cc of 300; Inject at 4cc per second 5 sec scan delay

| Scan Mode | Thickness Speed Pitch | Table Interval | SFOV | kVp | Auto mA/ Noise Index | Total Exposure Time (sec) | Recon Type |
|---|---|---|---|---|---|---|---|
| Cine<br>Full<br>1.0 | 5.0<br>4i | 0 | Head<br>23 | 80 | 190-200<br>180<br>images | 45 -350<br>50 - 300 | Standard<br>See<br>below* |

***Data Reconstruction: Show recon 1 4i 5mm**

**Algorithm: Recon 1-Standard Recon 2-Standard 1.25mm Recon**
**Reformat: Axial, Sagittal and Coronal MIPS**
**Network: Recon 1, 2 and Sagittals and coronals to PACS; Recon 3 and 4 to AWSERV**

**Notes: Additional locations can be acquired with another injection of contrast after waiting 5-10 minutes.**
**On the Perfusion series, type in the location 10mm below the selected location. At 4i 5mm this will give you the location and 10mm below and 10mm above.**
**The interval must be 0 and number of images should be 180.**
**Cine time between images is 1 second.**