Computed Tomography Perfusion Imaging

What is it?

Computed Tomography (CT) perfusion imaging provides a quantitative measure of regional cerebral blood flow. A perfusion CT study involves sequential acquisition of CT sections during intravenous administration of an iodinated contrast agent. Analysis of the result allows the physician to calculate the regional cerebral blood volume, the blood transit time through the capillaries and the regional cerebral blood flow. Currently, non-contrast CT is used to detect intracerebral hemorrhage in stroke patients who are being considered for thrombolytic therapy.

CT perfusion imaging has been proposed primarily as a method of evaluating patients suspected of having an acute stroke whenever thrombolysis is considered. CT perfusion imaging may provide information about the presence of the site of vascular occlusion, the presence and extent of ischemia and about tissue viability. It is thought this information may help the clinician determine if thrombolysis is appropriate. Potential advantages are that it can be performed using standard CT scanners and it is less invasive than CT angiography. It can be performed rapidly and involves injection of a relatively small amount of contrast agent.

However, prospective clinical studies are needed to determine the clinical value of CT perfusion imaging over standard non-contrast CT in the assessment of patients with symptoms suggestive of acute stroke and in the triage of patients for whom thrombolytic therapy is being contemplated.

Criteria

- **Cerebral CT perfusion imaging** is considered experimental and investigational for assessing persons suspected of having an acute stroke or in triaging persons with stroke for thrombolytic therapy because there is inadequate published evidence that it improves outcomes over standard non-contrast CT scanning.

- **Cerebral CT perfusion imaging** is considered experimental and investigational for all other indications including the following because there is inadequate scientific evidence to support its use (not an all inclusive list):

  For evaluation of:
  a) cerebral gliomas
  b) cerebral vasospasm
  c) chronic cerebral ischemia
  d) head trauma
  e) herpes simplex virus encephalitis; and,

  For use in:
  a) balloon occlusion testing
  b) vascular neurosurgery.

Notice

Sentinel retains the right to review and update sMed Policies at its sole discretion. sMed Policies are proprietary information of Sentinel. Any sale, copying or dissemination is prohibited; however, limited copying is permitted for individual use.