MRI Modalities of the Brain Guidelines

DEPARTMENT: Utilization Management Physician Practice Guidelines

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SOURCES: Milliman, Inc.
American College of Radiology Appropriateness Criteria
https://acsearch.acr.org/list
HealthLink Clinical Guidelines; CT/MRI Brain and Head

RECOMMENDED GUIDELINES:

1) Medical evidence does not support the routine use of CT or MRI Brain for:
   a) Headache with:
      i) Normal neurologic examination and no new features
      ii) Episodic, disabling headache with a stable pattern and a normal neurologic examination.
   b) Tension headache.
   c) Dizziness (excluding true vertigo).
2) Indications:
   New focal neurologic deficit.
   a) TIA.tremor
   b) Ataxia.
   c) Focal sensory deficit of face, limb, or whole side of body.
   d) Focal weakness of face, limb, or whole side of body.
   e) Change in speech pattern (aphasia, dysarthria).
   f) Visual disturbance (ie, diplopia, visual field deficit, central nystagmus).
   g) Suspected inflammation or infection
      i) Abscesses
      ii) Empyema
      iii) Encephalitis
      iv) Multiple sclerosis
   h) Altered mental status. – In conjunction with non-contrast CT
   i) Congenital abnormalities present on exam.
   j) Dementia & Movement Disorder:
      i) Dementia is of abrupt or of relatively recent onset or has acutely worsened.
      ii) Suspect potentially treatable abnormality such as:
         (1) Subdural hematoma.
         (2) Frontal lobe tumor.
         (3) Normal Pressure Hydrocephalus (should have 2 of 3 symptoms).
            (a) Gait apraxia.
            (b) Incontinence.
            (c) Dementia.

(4) Probable and Possible Alzheimer's Dementia
(5) Suspected frontotemporal dementia
(6) Suspected dementia with Lewy Bodies
(7) Vascular Dementia
(8) Prion disease
(9) Suspected Huntington Disease

iii) Clinical features suggestive of neurodegeneration with brain iron accumulation (Hallovorden Spatz)
iv) Motor Neuron Disease
v) Pre-op surgery or stimulator placement

k) Epilepsies <u>if:</u>
i) New onset seizure, various causes
ii) Altered mental status
iii) Fever
iv) History of head trauma – if sub-acute or chronic. CT preferred first in acute setting, MRI is complementary in acute brain injury
v) Persistent headache
vi) Patient on anticoagulants
vii) AIDS
viii) Surgical Planning

l) Headache <u>if:</u>
i) First or worst headache of the patient's life, particularly if the onset was rapid. CT should be done first.
ii) A change in the frequency, severity, or clinical features of the headache attack.
iii) Onset of headache after 55 years of age.
iv) A new or progressive headache that persists for days.
v) Precipitation of head pain with coughing, sneezing, bending down, or Valsalva.
vi) Systemic symptoms such as myalgia, fever, malaise, weight loss, scalp tenderness, or jaw claudication.
vii) Focal neurologic symptoms.
viii) Abnormal neurologic exam.
ix) Confusion
x) Seizures.
xi) HIV-positive patient.
xii) Headache in the elderly with sed rate higher than 55 especially with temporal pain
xiii) Cluster Headache / Trigeminal Neuralgia

m) Hearing loss:
i) Sensorineural hearing loss with or without vertigo.
ii) Total deafness for cochlear implant planning.
iii) Acoustic Neuroma

n) Hydrocephalus suspected in a child.

o) Parkinson's disease:
i) Typical and Atypical unresponsive to levodopa
ii) Preoperatively before Parkinson's surgery.

p) Neuroendocrine, Visual loss, Cranial neuropathies
i) Bitemporal hemianopia.
ii) Oculomotor palsies.
iii) Abnormal temperature regulation.
iv) Hyperprolactinemia.
v) Diabetes insipidus.
vi) Hypogonadotropic hypogonadism.
vii) Central hyperthyroidism.
(1) Elevated TSH.
(2) Normal or increased free T4.
viii) Central hypothyroidism.
(1) Free T4 below normal.

(2) TSH below normal.
ix) Cushing syndrome.
x) Acromegaly.

q) Tremor
i) Indicated preoperatively before surgery or nerve stimulator implant.

r) Vertigo if:
i) Vertigo that is unresponsive to treatment.
ii) Associated focal neurologic findings.

3) Indications for MR angiogram/MR venogram:
a) Focal neurologic symptoms AND:
i) Neck pain.
ii) Suspected carotid or vertebral artery dissection.
iii) Venous sinus thrombosis
iv) Screening for possible aneurysm and monitoring for size
v) Carotid artery stenosis (carotid ultrasound preferred screening method).
vi) Suspect posterior circulation or intracranial stenosis.
vii) If CTA is contraindicated—contrast allergy