Cohere Medicare Advantage Policy - Magnetic Resonance Angiography (MRA), Head

Clinical Guidelines for Medical Necessity Review

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Important Notices

Notices & Disclaimers:

GUIDELINES ARE SOLELY FOR COHERE'S USE IN PERFORMING MEDICAL NECESSITY REVIEWS AND ARE NOT INTENDED TO INFORM OR ALTER CLINICAL DECISION-MAKING OF END USERS.

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Other Notices:

Guideline Information:

Specialty Area: Diagnostic Imaging
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Table of Contents

Important Notices **2**
Table of Contents 3
Medical Necessity Criteria **4**
Service: **4**
Benefit Category 4
Recommended Clinical Approach 4
Evaluation of Clinical Benefits and Potential Harms 4
Medical Necessity Criteria 5
Indications 5
Non-Indications 6
Level of Care Criteria 6
Procedure Codes (CPT/HCPCS) 6
Medical Evidence **7**
References **8**
Clinical Guideline Revision History/Information **9**

Medical Necessity Criteria

Service: Magnetic Resonance Angiography (MRA), Head

Benefit Category

Diagnostic Services in Outpatient Hospital
Diagnostic Tests (other)

Please Note: This may not be an exhaustive list of all applicable Medicare benefit categories for this item or service.[37-43, 50-51]

Related CMS Documents

Please refer to the CMS Medicare Coverage Database for the most current applicable CMS National Coverage.

- National Coverage Determination (NCD). Magnetic resonance imaging (MRI) (220.2)
- Local Coverage Determination (LCD). Magnetic resonance angiography (MRA) (L33633)
- Billing and Coding: Magnetic resonance angiography (MRA) (A56747)
- Local Coverage Determination (LCD). Magnetic resonance angiography (MRA) (L34865)
- Billing and Coding: Magnetic resonance angiography (MRA) (A56805)
- Local Coverage Determination (LCD). Magnetic resonance angiography (MRA) (L34372)
- Billing and Coding: Magnetic resonance angiography (MRA) (A57779)
- Local Coverage Determination (LCD). Magnetic resonance angiography (MRA) (L34424)
- Billing and Coding: Magnetic resonance angiography (MRA) (A56775)

Recommended Clinical Approach

Imaging analysis utilizing magnetic resonance angiography (MRA) of the head can be performed alone or in conjunction with MRA of the neck. Contrast and concurrent exams should be guided by clinical suspicion of disease presence or exclusion to direct value-based care. Staging,

pre-surgical planning, and screening are also recommendations of a clinical approach. MRA plays a crucial role in the routine assessment of patients experiencing stroke syndrome, specifically for the evaluation of both cervical and intracranial vessels, enabling the identification and diagnosis of vascular anomalies. In conjunction with MRI, MRA enhances the examination by providing a comprehensive analysis of the cerebral parenchyma. MRA also serves as a viable alternative to CT angiography when using iodinated contrast material is not feasible.

Evaluation of Clinical Harms and Benefits

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of magnetic resonance angiography (MRA), head. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- There is a risk of malfunction of implanted medical devices (e.g., implanted pacemakers, cochlear implants).
- A potential exists for allergic reactions to contrast material, if used in the study. The MRI department staff will monitor the patient for an allergic reaction and treat as recommended by a physician.[1, 44-45]
- Use of gadolinium-based contrast is not recommended during pregnancy or in patients with acute or chronic kidney injury or disease.[1, 44-45]
- If sedation is used for the study (for anxiety or claustrophobia), there is a risk of over-sedation. The patient will be monitored during the procedure to reduce this risk.
- There is uncertain risk for MR imaging in pregnant patients. The decision to image in a pregnant patient should be made on an individual basis in consultation with the patient's obstetric provider.[46]
- There is a risk of increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.[47]

The clinical benefits of using these criteria include:

- Improved patient outcomes through timely and appropriate access to the procedure. The non-invasive nature of MRA of the head and neck, particularly in the Medicare population, has increased accessibility and appropriate usage compared to conventional invasive angiography.[48]
- Reduction in complications and adverse effects from unnecessary procedures. According to the 2020 ACR-NASCI-SPR practice parameter for the performance of body magnetic resonance angiography (MRA), the procedure is stated to be much less invasive than standard catheter-based invasive angiography, reducing the risk of vascular injury. For patients who are unable to receive gadolinium-based contrast agents, non-contrast study techniques are available. There is no associated ionizing radiation exposure as with computed tomography studies. MRA is stated to be useful in diagnosis of vascular disease in pediatric patients, although sedation or general anesthesia may be required.[1]
- Enhanced diagnostic accuracy for complex medical conditions. Contrast-enhanced MRA of the head is accurate for detecting aneurysms and dissections as well as disease within the vertebrobasilar circulation, and can evaluate the head and neck in a single study.[49]
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

- ➔ **Magnetic resonance angiography (MRA), head** is considered appropriate if **ANY** of the following is **TRUE**[37-43]:
  - ◆ **ALL** of the following are **TRUE:**
    - **ANY** of the following is **TRUE**:
      - Conventional (catheter) angiography has not been performed; **OR**
      - Conventional (catheter) angiography has been performed, and the results are inconclusive or require further evaluation[42]; **AND**
    - **ANY** of the following is **TRUE**:
      - The patient requires post-procedure or post-treatment follow-up; **OR**
      - The patient is a candidate for surgery or other intervention, which may be found to be appropriate based upon MRA results for conditions including **ANY** of the following:
        - ◆ Stenosis; **OR**
        - ◆ Tumors; **OR**
        - ◆ Aneurysms; **OR**
        - ◆ Vascular malformations; **OR**
        - ◆ Dissections; **OR**
        - ◆ Thrombosis; **OR**
        - ◆ Other vascular conditions, not specified; **OR**
        - ◆ Ultrasound-confirmed cervical bruit or thrill with suspicion of neck carotid stenosis for surgical planning when ordered in conjunction with MRA neck; **OR**
        - ◆ Intracranial hypertension (idiopathic), suspected; **OR**
        - ◆ Evaluation of **ANY** of the following:
          - Circle of Willis; **OR**
          - Anterior, middle, or posterior cerebral arteries; **OR**
          - Basilar arteries; **OR**
          - Venous sinuses[37-38]; **OR**

- Headache with **ANY** of the following:
  - Clinically-significant finding of blood in the cerebrospinal fluid[38,40]; **OR**
  - Signs and symptoms strongly suggesting an unruptured intracranial aneurysm and/or intracranial hemorrhage (e.g., acute onset worst/thunderclap headache, new onset or pattern during pregnancy or peripartum period, or headache associated with exercise, exertion, Valsalva, or sexual activity); **OR**[38,40]
- For evaluation of **ANY** of the following uncategorized/miscellaneous symptoms when applicable:
  - Massive epistaxis; **OR**
  - Neurological deficit(s)(focal or lateralizing); **OR**
  - Nontraumatic orbital asymmetry, exophthalmos, or enophthalmos[5]; **OR**
  - Ptosis (new-onset); **OR**
  - Pulsatile tinnitus (subjective or objective); **OR**
  - Visual changes (e.g., visual loss, optic nerve symptoms, chiasm symptoms (including pre- or post chiasm, ophthalmoplegia, diplopia)[5]; **OR**
- Repeat imaging (defined as repeat request following recent imaging of the same anatomic region with the same modality), in the absence of established guidelines, will be considered reasonable and necessary if **ANY** of the following is **TRUE**:
  - New or worsening symptoms, such that repeat imaging would influence treatment; **OR**
  - One-time clarifying follow-up of a prior indeterminate finding; **OR**
  - In the absence of change in symptoms, there is an established need for monitoring which would influence management.

Non-Indications

- ➔ **Magnetic resonance angiography (MRA), head** is not considered appropriate if **ANY** of the following is **TRUE**:
  - ◆ Used in conjunction with conventional contrast angiography when the criteria listed in the Indications section above have not been met[37-38,40]; **OR**
  - ◆ For screening asymptomatic patients for intracranial aneurysms[38,40]; **OR**
  - ◆ If contrast is used, history of anaphylactic allergic reaction to gadolinium contrast media with detailed guidelines for use in patients with renal insufficiency; **OR**
  - ◆ The patient has metallic clips on vascular aneurysms; **OR**
  - ◆ Incompatible implantable devices (e.g., pacemakers, defibrillators, cardiac valves); **OR**
  - ◆ Metallic foreign body in orbits/other critical area(s) or within the field of view and obscuring area of concern.

*NOTE: MRI in patients with claustrophobia should be requested at the discretion of the ordering provider.
**NOTE: MRI in pregnant patients should be requested at the discretion of the ordering provider and obstetric care provider.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/ HCPCS Code	Code Description
70544	Magnetic resonance angiography (MRA), head; without contrast material(s)
70545	Magnetic resonance angiography (MRA), head; with contrast material(s)
70546	Magnetic resonance angiography (MRA), head; without contrast material(s), followed by contrast material(s) and further sequences

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Medical Evidence

Amin et al. (2023) present a scientific statement from the American Heart Association regarding the diagnosis, workup, and risk reduction of transient ischemic attack in the emergency department. Computed tomography angiography (CTA) demonstrates superior sensitivity and positive predictive value compared to magnetic resonance angiography (MRA) in detecting intracranial stenosis and occlusion. As a result, CTA is the recommended imaging modality over time-of-flight (without contrast) MRA. If there is a concern regarding administering iodinated contrast, expedited magnetic resonance imaging (MRI) with MRA is a viable alternative. Time-of-flight MRA may result in images of lower quality as there is a tendency to overestimate cervical carotid stenosis compared to gadolinium-enhanced MRA. However, this type of MRA may be suitable for screening purposes. Gadolinium-enhanced MRA of the neck is the preferred choice for patients who can safely receive gadolinium contrast.[22]

AbuRahma et al. (2022) review clinical guidelines for managing extracranial cerebrovascular disease published by the Society for Vascular Surgery. Contrast-enhanced MRA can produce three-dimensional images that rival those from a formal arteriography. A key advantage of MRA is less radiation exposure to the individual, and the use of iodinated-based contrast materials is not needed. Further, MRA allows for the integration of MRI of the brain, enabling the identification of clinically silent cerebral infarction. It also facilitates the assessment of plaque morphology, focusing on detecting intraplaque hemorrhage. The severity of carotid stenosis is more identifiable with MRA than CTA. While MRA excels in various aspects, it is unsuitable for screening carotid artery disease due to its substantial cost.[23]

Cummins et al. (2022) discuss the role of TOF MRA for pulsatile tinnitus (PT) and the identification of vascular causes of PT, including dural arteriovenous fistulas (DAVFs). The annual intracranial hemorrhage risk of DAVFs is over 24%. TOF-MRA is considered one of the most sensitive and specific noninvasive methods for diagnosing DAVF. The diagnosis of arterial aneurysms is aided by the use of TOF MRA, with a sensitivity greater than 90% and specificity over 80%. Stenoses are also detected by MRA (a sensitivity of 95.5% and specificity of 87.2%). When severe carotid artery stenosis is a cause of PT, the sensitivity

and specificity of TOF MRA is nearly 100%. Advantages of MRA include a greater pooled sensitivity for diagnosis than CT as well as excellent spatial resolution and is the most powerful sequence for DAVF diagnosis. In addition, MRA can diagnose intracranial and high cervical arterial etiologies (e.g., fibromuscular dysplasia, carotid stenosis, variant anatomy). Disadvantages include high cost, scanning time, an the dephasing of tortuous vessels.[24]

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Clinical Guideline Revision History/Information

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