Cohere Medical Policy - Magnetic Resonance Angiography (MRA), Abdomen/Pelvis

Clinical Guidelines for Medical Necessity Review

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Important Notices

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Guideline Information:

Specialty Area: Diagnostic Imaging
Guideline Name: Cohere Medical Policy - Magnetic Resonance Angiography (MRA), Abdomen/Pelvis

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Type: [**X**] Adult (18+ yo) | [**X**] Pediatric (0-17yo)

Table of Contents

Medical Necessity Criteria

Service: Magnetic Resonance Angiography (MRA), Abdomen/Pelvis

Recommended Clinical Approach

Magnetic resonance angiography (MRA) visualizes the blood vessels in the abdomen and pelvis. It aids in diagnosing and evaluating vascular conditions such as aneurysms, stenosis, occlusions, and vascular malformations. Unlike CT angiography, MRA does not use ionizing radiation yet provides detailed images of blood vessels and surrounding tissues. Magnetic resonance venography (MRV) of the abdomen and pelvis is a non-invasive imaging technique that uses magnetic resonance imaging (MRI) to visualize the veins in these regions. This method is particularly useful for evaluating venous disorders without exposing patients to ionizing radiation. MRA and MRV are less invasive than conventional X-ray digital subtraction angiography.[1]

Medical Necessity Criteria

Indications

- ➔ **Magnetic resonance angiography (MRA), abdomen/pelvis** is considered appropriate if **ALL** of the following is **TRUE**[1-2]:
  - ◆ Ultrasound and CTA are contraindicated or inconclusive (e.g., body habitus for ultrasound, anaphylactic reaction due to IV contrast reaction, pregnancy, pediatric); **AND**
  - ◆ **ANY** of the following is **TRUE**:
    - Vascular conditions, known or suspected, including **ANY** of the following:
      - Suspected renal artery stenosis when surgical intervention is planned if diagnosed, including **ANY** of the following[3]:
        - ◆ Previous imaging (including ultrasound, captopril scintigraphy) indicates small kidney or unequal kidney sizes[4-5]; **OR**
        - ◆ Early-onset hypertension (age less than 35, diastolic greater than 110 mmHg)[6]; **OR**
        - ◆ Late-onset hypertension (age greater than 50)[4-6]; **OR**

        - Renal artery bruit[4-6]; **OR**
        - Malignant or accelerated hypertension[6]; **OR**
        - Sudden development or worsening of hypertension[6]; **OR**
        - Deterioration of renal function in response to angiotensin-converting enzyme inhibitors[6]; **OR**
        - Generalized arteriosclerotic occlusive disease with hypertension[6]; **OR**
        - Hypertension resistant to medication, and the patient must be currently taking **ALL** of the following at maximally tolerated doses[6,7]:
            - Long-acting calcium channel blocker; **AND**
            - Long-acting ace inhibitor or angiotensin receptor blocker (ARB); **AND**
            - Diuretic (e.g., loop or thiazide); **OR**
    - Mesenteric ischemia or ischemic enteritis/colitis; **OR**
    - Vasculitis; **OR**
    - Vascular injury secondary to trauma; **OR**
    - Thromboembolic Disease; **OR**
    - Unrepaired aortic aneurysm, initial evaluation; **OR**
    - Unrepaired aortic aneurysm, follow-up evaluation is based on aneurysm size when **ANY** of the following is **TRUE**[8]:
        - 3-3.9 cm, every 3 years; **OR**
        - 4-4.9 cm, annually; **OR**
        - 5-5.4 cm, every 6 months; **OR**
- Preoperative, postoperative, or pre-treatment evaluation for **ANY** of the following:
    - Evaluation post-endovascular repair (EVAR) or open repair of abdominal aortic aneurysm (AAA) and **ANY** of the following is **TRUE**[4-5,8]:
        - Follow-up within one month; **OR**
        - Follow-up within one year; **OR**
        - Type II endoleak, every six months for up to two years after diagnosis: **OR**
        - Type II endoleak, annual followup; **OR**

    - Planning for vascular surgery, interventional procedure; **OR**
    - Other procedures involving arteries (e.g. Inferior epigastric arteries for breast reconstruction, UPJ obstruction, solid organ transplant); **OR**
- Retroperitoneal hematoma or hemorrhage; **OR**
- Known or suspected syndromes with increased risk of vascular anomalies including **ANY**, but not limited to, the following:
    - As a one-time screening for syndromes with a vascular component (e.g., fibromuscular dysplasia, Ehlers-Danlos syndrome, Marfan syndrome, neurofibromatosis, William's syndrome, tuberous sclerosis); **OR**
    - Loeys Dietz (every two years for screening; surveillance as indicated depending on abnormalities found); **OR**
    - Other syndromes not otherwise specified, follow-up as clinical documentation supports; **OR**
- Repeat imaging of a specific area or structure using the same imaging modality (in the absence of an existing follow-up guideline) is considered appropriate when **ALL** of the following are **TRUE**:
    - There is documented clinical necessity; **AND**
    - **ANY** of the following is **TRUE**:
        - A change in clinical status, such as worsening symptoms or the emergence of new symptoms, that may influence the treatment approach; **OR**
        - The requirement for interval reassessment, which may alter the treatment plan; **OR**
        - One-time follow-up of a prior indeterminate finding to assess for interval change; **OR**
        - The need for re-imaging either before or after performing an invasive procedure; **OR**
        - Prior imaging results of the specific area or structure, obtained using the same imaging

modality, must be documented and available for comparison.

➔ **Magnetic resonance venography (MRV), abdomen/pelvis** is considered appropriate if **ALL** of the following are **TRUE**:
- ◆ Ultrasound and CT venography (CTV) are contraindicated or inconclusive (e.g., body habitus for ultrasound, anaphylactic reaction due to IV contrast reaction, pregnancy, pediatric); **AND**
- ◆ **ANY** of the following is **TRUE**:
  - Vascular conditions, known or suspected, including **ANY** of the following:
    - Diffuse unexplained lower extremity edema with negative or inconclusive ultrasound; **OR**
    - May-Thurner syndrome (iliac vein compression syndrome including pelvic CT venography)[9]; **OR**
    - Retroperitoneal hematoma or hemorrhage; **OR**
    - Large vein injury secondary to trauma; **OR**
    - Large vein thrombosis of the major abdominal or pelvic veins, including IVC, iliac, renal, portal, hepatic, and mesenteric veins, when Doppler ultrasound is inconclusive or indicates presence or complications; **OR**
    - Vascular invasion or displacement by tumor; **OR**
    - Detailed evaluation for Pelvic Congestion Syndrome; **OR**
  - Vascular mapping for organ donation; **OR**
  - Initial diagnostic, one-time pre or one-time post-treatment evaluation for treatment planning or evidence of clinical concern for **ANY** of the following:
    - Anastomotic integrity or stent patency; **OR**
    - Portal venous system (hepatic portal system) after Doppler ultrasound has been performed; **OR**
    - Vascular malformation; **OR**
    - Vascular mapping for organ donation or before procedure/surgery for planning purposes (including TIPS); **OR**

- Repeat imaging of a specific area or structure using the same imaging modality (in the absence of an existing follow-up guideline) is considered appropriate when **ALL** of the following is **TRUE**:
    - There is documented clinical necessity; **AND**
    - Prior imaging results of the specific area or structure, obtained using the same imaging modality, must be documented and available for comparison; **AND**
    - **ANY** of the following is **TRUE**:
        - A change in clinical status, such as worsening symptoms or the emergence of new symptoms, that may influence the treatment approach; **OR**
        - The requirement for interval reassessment, which may alter the treatment plan; **OR**
        - One-time follow-up of a prior indeterminate finding to assess for interval change; **OR**
        - The need for re-imaging either before or after performing an invasive procedure.

Non-Indications

➔ **Magnetic resonance angiography (MRA), abdomen/pelvis** is not considered appropriate if **ANY** of the following is **TRUE**:

- The patient has undergone advanced imaging of the same body part and for the same indication within 3 months, without being on treatment; **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
72198	Magnetic resonance angiography (MRA) of pelvis, with contrast material
74185	Magnetic resonance angiography (MRA) of abdomen, with contrast material
C8900	Magnetic resonance angiography with contrast, abdomen
C8901	Magnetic resonance angiography without contrast, abdomen
C8902	Magnetic resonance angiography without contrast followed by with contrast, abdomen
C8918	Magnetic resonance angiography with contrast, pelvis
C8919	Magnetic resonance angiography without contrast, pelvis
C8920	Magnetic resonance angiography without contrast followed by with contrast, pelvis

Medical Evidence

Roditi et al. (2022) performed a review on abdominal and pelvic magnetic resonance angiography (MRA). The topics discussed include MRA for assessing renal vasculature in potential kidney donors and hypertensive patients, hepatic and mesenteric MRA for evaluating liver donors, individuals with portal hypertension, and those with chronic mesenteric ischemia. Pelvic MRA is also mentioned for pre-treatment planning in uterine fibroid embolization and patients with pelvic congestion syndrome. Abdominal wall MRA is also highlighted for planning breast reconstructive surgery.[10]

Chaikof et al. (2018) discuss updates to practice guidelines published by the Society for Vascular Surgery on the care of patients with an abdominal aortic aneurysm. Recommendations include surveillance imaging at 12-month intervals for AAA between 4.0 to 4.9 cm in diameter and utilizing the Vascular Quality Initiative mortality risk score for decision-making in aneurysm repair. Endovascular repair is also preferred for ruptured aneurysms. Color duplex ultrasound for postoperative surveillance after endovascular repair without complications is also recommended. Overall, the focus is to enhance decision-making and perioperative outcomes.[8]

Zucker et al. (2016) review noninvasive diagnostic imaging for assessing venous compression syndromes, including magnetic resonance venography (MRV). While the exam typically takes longer than CT scans, MRV offers the advantage of reducing ionizing radiation risks. Optimal timing is more easily achieved for venous contrast. Additionally, MRI enables non-contrast exams, which are safer for patients with renal insufficiency, who face a higher risk of nephrogenic systemic fibrosis with gadolinium contrast.[11]

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Clinical Guideline Revision History/Information

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