04-70540-21

Original Effective Date: 12/15/13

Reviewed: 09/26/24

Revised: 10/15/24

Subject: Magnetic Resonance Angiography (MRA) Abdomen and Pelvis

THIS MEDICAL COVERAGE GUIDELINE IS NOT AN AUTHORIZATION, CERTIFICATION, EXPLANATION OF BENEFITS, OR A GUARANTEE OF PAYMENT, NOR DOES IT SUBSTITUTE FOR OR CONSTITUTE MEDICAL ADVICE. ALL MEDICAL DECISIONS ARE SOLELY THE RESPONSIBILITY OF THE PATIENT AND PHYSICIAN. BENEFITS ARE DETERMINED BY THE GROUP CONTRACT, MEMBER BENEFIT BOOKLET, AND/OR INDIVIDUAL SUBSCRIBER CERTIFICATE IN EFFECT AT THE TIME SERVICES WERE RENDERED. THIS MEDICAL COVERAGE GUIDELINE APPLIES TO ALL LINES OF BUSINESS UNLESS OTHERWISE NOTED IN THE PROGRAM EXCEPTIONS SECTION.

DESCRIPTION:

Magnetic resonance angiography (MRA) is a noninvasive imaging technology, which generates images of the arteries that can be evaluated for evidence of stenosis, occlusion or aneurysms. MRA is used to evaluate the arteries of the abdominal aorta and the renal arteries. A contrast agent (gadolinium) may be used with MRA for better visualization and may be used in individuals who have a history of contrast allergy and who are at high risk of kidney failure.

Summary and Analysis of Evidence: Magnetic resonance angiography (MRA) has important attributes that make it valuable in assessing vascular disease. Compared with radiographic catheter-based invasive angiography, it is considerably less invasive with no significant risk of vascular injury. MRA has also shown promising results for atherosclerotic plaque characterization, notably for detection of high-risk features (e.g., intraplaque hemorrhage, lipid-rich necrotic core, or fibrous cap thinning/rupture) of carotid atherosclerotic plaque. MRA is also useful in diagnosing vascular disease in children and is more advantageous for this patient population given the lack of radiation exposure and ability to include time-resolved scans. Indications for MRA include, but not limited to the following: vascular stenosis or occlusion due to atherosclerosis, vasculitis, or thromboembolism, thoracic, abdominal, or pelvic hemorrhage, mapping vascular anatomy for preprocedural planning and postprocedural surveillance of treatment, aneurysms and vascular malformations, venous malformations, presence, nature, and extent of injury to vessels, including dissection, venous disease, including occlusion, thrombosis, and tumor invasion, and congenital abnormalities. Abdominal and pelvic vasculature: aneurysem of the aorta and major branch vessels, stenosis or occlusion of the aorta and major branch vessels, dissection of the aorta, vascular malformation and arteriovenous fistula, portal, mesenteric, or splenic vein thrombosis, inferior vena cava (IVC), pelvic vein, gonadal vein, renal vein, or hepatic vein thrombosis, mesenteric ischemia (ACR–NASCI–SPR, 2020).

POSITION STATEMENT:

Documentation Requirements

Documentation containing the medical necessity of the magnetic resonance angiography (MRA) of the abdomen and pelvis and imaging results (e.g., images, clinical reports) should be maintained in the member's medical record. Documentation may be requested as part of the review process.

Magnetic resonance angiography (MRA) of the abdomen and pelvis **meets the definition of medical necessity** for the following:

Indications for Abdomen MRA

Evaluation of known or suspected abdominal vascular disease

- Evaluation of known or suspected aortic aneurysm
    - For screening, US is initial study
        - Known or suspected aneurysm > 2.5 cm **AND** equivocal or indeterminate ultrasound results
        - Prior imaging (e.g., ultrasound) demonstrating aneurysm >2.5 cm in diameter
        - Suspected complications of known aneurysm as evidenced by signs/symptoms, such as new onset of abdominal or pelvic pain
        - Surveillance imaging every three years for diameter 2.0-2.9 cm and annually for 3.0-3.4 cm if doppler ultrasound is inconclusive. If > 3.5 cm, < 6 month follow-up (and consider intervention).
- Evidence of vascular abnormality seen on prior imaging studies and limited to the abdomen
- For known large vessel diseases limited to the abdomen
- For diagnosis or follow-up of visceral artery aneurysm
- To determine the vascular source of retroperitoneal hematoma or hemorrhage in the setting of trauma, tumor invasion, fistula or vasculitis when CTA is contraindicated (CT rather than MRA/CTA is the modality of choice for diagnosing hemorrhage
- For evaluation of known or suspected mesenteric ischemia/ischemic colitis when CTA is contraindicated (can approve MRA abdomen and pelvis)
- For members with fibromuscular dysplasia (FMD), a one-time vascular study of the abdomen and pelvis (CTA or MRA)
- For members with vascular Ehlers-Danlos syndrome or Marfan syndrome, recommend a one-time study of the abdomen and pelvis (CTA/MRA)
- For Loeys-Dietz, imaging at least every two years
- For assessment in members with spontaneous coronary artery dissection (SCAD), can be done at time of coronary angiography (also approve CTA pelvis)
- Vascular invasion or displacement by tumor (conventional CT or MRI also appropriate)

- For evaluation of hepatic blood vessel abnormalities (aneurysm, hepatic vein thrombosis, stenosis post-transplant) after doppler ultrasound has been performed; to clarify or further evaluate ultrasound findings
- For evaluation of known or suspected renal artery stenosis or resistant hypertension in the setting of normal renal function (with impaired renal function, eGFR <30, use US with Doppler) unrelated to recent medication.

Venous Disease

- Suspected renal vein thrombosis in member with known renal mass or from other causes
- Venous thrombosis if previous studies have not resulted in a clear diagnosis
- For known/suspected May-Thurner syndrome (iliac vein compression syndrome include pelvic CTV)
- Vascular invasion or displacement by tumor (conventional CT or MRI also appropriate)
- For evaluation of portal venous system (hepatic portal system) after doppler ultrasound has been performed
- For diffuse unexplained lower extremity edema with negative or inconclusive ultrasound
- In pregnant women with suspected deep venous thrombosis (DVT) (vs serial compression ultrasound) (include pelvis MRV for iliac veins).

Pre-operative evaluation

- For evaluation of transjugular intrahepatic portosystemic shunt (TIPS) when Doppler ultrasound indicates suspected complications
- Evaluation prior to interventional vascular procedures for luminal patency versus restenosis due to conditions such as atherosclerosis, thromboembolism, and intimal hyperplasia
- Evaluation prior to endovascular aneurysm repair (EVAR)
- Imaging of the deep inferior epigastric arteries for surgical planning (breast reconstruction surgery)
- For pre-transplant evaluation of either liver or kidney.

Post-operative/post-procedural evaluation

- Evaluation of endovascular/interventional abdominal vascular procedures for luminal patency versus restenosis due to conditions such as atherosclerosis, thromboembolism, and intimal hyperplasia
- Evaluation of post-operative complications
- Follow-up for post-endovascular repair (EVAR) or open repair of abdominal aortic aneurysm (AAA) or abdominal extent of iliac artery aneurysms.
    - Routine, baseline study (post-op/intervention) is warranted within 1-3 months (abdomen and pelvis MRA when CTA is inconclusive)

- Asymptomatic at six (6) month intervals, for one (1) year then annually
- If symptomatic/complications related to stent graft – more frequent imaging may be needed.

- Follow-up study may be needed to help evaluate a member's progress after treatment, procedure, intervention or surgery. Documentation required.

Other Vascular Indications

- For evaluation of hepatic blood vessel abnormalities after doppler ultrasound has been performed; to clarify or further evaluate ultrasound findings
- Kidney failure or renal insufficiency if initial evaluation performed with ultrasound is inconclusive.

Indications for Pelvis MRA

Evaluation of known or suspected pelvic vascular disease

- Evidence of vascular abnormality seen on prior imaging studies
- For pelvic extent of known large vessel diseases
- For suspected pelvic extent of aortic dissection
- For evaluation of known or suspected aneurysms limited to the pelvis or evaluating pelvic extent of aortic aneurysm
- Follow-up of iliac artery aneurysm:
  - Every three years for diameter 2.0 – 2.9 cm
  - Annually if between 3.0-3.4 if Doppler ultrasound is inconclusive
  - If >3.5 cm, <six month follow-up
- To determine a vascular source of retroperitoneal hematoma or hemorrhage in the setting of trauma, tumor invasion, fistula or vasculitis when CTA is contrainidacted
- For known or suspected mesenteric ischemia/ischemic colitis when CTA is contraindicated
- Vascular invasion or displacement by tumor (Conventional CT or MRI also appropriate)
- For members with fibromuscular dysplasia (FMD), a one-time vascular study of the abdomen and pelvis (CTA or MRA)
- For members with Vascular Ehlers-Danlos syndrome or Marfan syndrome recommend a onetime study of the abdomen and pelvis
- For Loeyz-Dietz imaging at least every two years
- For assessment in members with spontaneous coronary artery dissection (SCAD) can be done at time of coronary angiography.

Venous

- For evaluation of suspected pelvic vascular disease or pelvic congestive syndrome when findings on ultrasound are indeterminate
- For diffuse, unexplained lower extremity edema with negative or inconclusive ultrasound
- For evaluation of venous thrombus in the inferior vena cava
- Venous thrombosis if previous studies have not resulted in a clear diagnosis
- Vascular invasion or displacement by tumor
- For known/suspected May-Thurner Syndrome (iliac vein compression syndrome).

Pre-operative evaluation

- Evaluation prior to interventional vascular for luminal patency versus restenosis due to conditions such as atherosclerosis, thromboembolism, and intimal hyperplasia
- Evaluation prior to endovascular aneurysm repair (EVAR)
- Imaging of the deep inferior epigastric arteries for surgical planning (breast reconstruction surgery)
- Prior to uterine artery embolization for fibroids.

Post-operative or post-procedural evaluation

- Post-operative complications of renal transplant allograft
- Endovascular/ interventional vascular procedures for luminal patency versus restenosis due to conditions such as atherosclerosis, thromboembolism, and intimal hyperplasia
- Post-operative complications, e.g., pseudoaneurysms related to surgical bypass grafts, vascular stents, and stent-grafts in the pelvis
- Follow-up for post-endovascular repair (EVAR) or open repair of abdominal aortic aneurysm (AAA) and iliac artery aneurysms
    - Routine, baseline study (post-op/intervention) is warranted within 1-3 months
    - Asymptomatic at six (6) month intervals, for one (1) year, then annually
    - Symptomatic/complications related to stent graft – more frequent imaging may be needed
- Follow-up study may be needed to help evaluate a member's progress after treatment, procedure, intervention, or surgery. Documentation required.

BILLING/CODING INFORMATION:

CPT Coding:

72198	Magnetic resonance angiography, pelvis, with or without contrast material(s)
74185	Magnetic resonance angiography, abdomen, with or without contrast material(s)

REIMBURSEMENT INFORMATION:

Refer to section entitled **POSITION STATEMENT**.

Re-imaging or additional imaging due to poor contrast enhanced exam or technically limited exam is the responsibility of the imaging provider.

LOINC Codes:

The following information may be required documentation to support medical necessity: physician history and physical, physician progress notes, plan of treatment and reason for magnetic resonance angiography (MRA) of the abdomen and pelvis.

Documentation Table	LOINC Codes	LOINC Time Frame Modifier Code	LOINC Time Frame Modifier Codes Narrative
Physician history and physical	28626-0	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Attending physician progress note	18741-9	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Plan of treatment	18776-5	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology reason for study	18785-6	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology comparison study-date and time	18779-9	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology comparison study observation	18834-2	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology-study observation	18782-3	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology-impression	19005-8	18805-2	Include all data of the selected type that represents observations made six months or

			fewer before starting date of service for the claim
Radiology study-recommendation (narrative)	18783-1	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim

PROGRAM EXCEPTIONS:

Federal Employee Plan (FEP): Follow FEP guidelines.

Medicare Advantage products

The following Local Coverage Determination (LCD) was reviewed: Magnetic Resonance Angiography (MRA), (L34372) located at fcso.com.

The following National Coverage Determination (NCD) was reviewed: Magnetic Resonance Imaging (MRI), (220.2) located at cms.gov.

DEFINITIONS:

No guideline specific definitions apply.

RELATED GUIDELINES:

Magnetic Resonance Angiography (MRA) Brain (Head), 04-70540-18

Magnetic Resonance Angiography (MRA) Chest, 04-70540-20

Magnetic Resonance Angiography (MRA) Extremity (Upper and Lower, 04-70540-22

Magnetic Resonance Angiography (MRA) Neck, 04-70540-19

Magnetic Resonance Angiography (MRA) Spinal Canal, 04-70540-23

OTHER:

None applicable.

REFERENCES:

1. American College of Radiology ACR Appropriateness Criteria®: Radiologic Management of Mesenteric Ischemia, Last review date: 2016.
2. ACR-NASCI-SPR Practice Guideline for the Performance of Body Magnetic Resonance Angiography (MRA), 2020.
3. Chaikof EL, Dalman RL, Eskandari MK et al. The Society for Vascular Surgery practice guidelines on the care of patients with an abdominal aortic aneurysm. J Vasc Surg 2018 Jan;67(1):2-77.e2.

4. Desjardins B, Dill KE, Flamm SD et al. ACR Appropriateness Criteria® pulsatile abdominal mass, suspected abdominal aortic aneurysm. International Journal of Cardiovascular Imaging 2013; 29(1): 177-183.
5. Schwope RB, Alper HJ, Talenfeld AD et al. MR angiography for patient surveillance after endovascular repair of abdominal aortic aneurysms. American Journal of Roentgenology 2007; 188(4): W334-W340.
6. Soulez G, Pasowicz M, Benea G et al. Renal artery stenosis evaluation: diagnostic performance of gadobenate dimeglumine-enhanced MR angiography--comparison with DSA. Radiology 2008; 247(1): 273-285.
7. Shih MC & Hagspiel KD. CTA and MRA in mesenteric ischemia: part 1, Role in diagnosis and differential diagnosis. American Journal of Roentgenology 2007; 188: 452-461.
8. Shih MP, Angle JF, Leung DA et al. CTA and MRA in mesenteric ischemia: part 2, normal findings and complications after surgical and endovascular treatment. American Journal of Roentgenology 2007; 188: 462-471.

COMMITTEE APPROVAL:

This Medical Coverage Guideline (MCG) was approved by the Florida Blue Medical Policy and Coverage Committee on 09/26/24.

GUIDELINE UPDATE INFORMATION:

12/15/13	New Medical Coverage Guideline.
01/01/15	Review. Added indications for abdomen and pelvic MRA; vascular disease, pre-operative and post-operative or post-procedure evaluation. Updated references.
04/15/15	Annual review. No change to position statement. Revised description and updated references.
08/15/18	Revision; revised position statements (abdomen and pelvis). Updated references.
03/15/20	Review/revision. Expanded criteria for evaluation of known or suspected abdominal vascular disease, pre-operative evaluation/post-operative or post-procedural evaluation. Updated references.
05/15/22	Review: Position statements and references updated.
07/01/22	Revision to Program Exceptions section.
12/09/23	Review; position statements and references updated.
10/15/24	Review; update position statement. Updated references.