Cohere Medicare Advantage Policy - Computed Tomography Angiography (CTA), Abdomen/ Pelvis, including Lower Extremity RunOff

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
Guideline Name: Computed Tomography Angiography (CTA, Abdomen/Pelvis, including Lower Extremity RunOff

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

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Medical Necessity Criteria

Service: Computed Tomography Angiography (CTA), Abdomen/Pelvis

Benefit Category

Not applicable

Related CMS Documents

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

- There are no NCDs or LCDs for computed tomography angiography (CTA), abdomen/pelvis.

Recommended Clinical Approach

Computed tomography angiography (CTA) is a preferred imaging test for various aortic conditions because of its excellent spatial resolution, rapid image acquisition, and wide availability. CTA provides a robust tool for planning aortic interventions and diagnosing acute and chronic vascular diseases in the abdomen. CTA is the standard for imaging aneurysms before intervention and evaluating the aorta in the acute setting to assess the traumatic injury, dissection, and aneurysm rupture. Knowledge of the imaging features of these disease processes, inflammatory vasculitis, and occlusive atherosclerotic disease is essential for guiding the surgical and medical management of patients. Computed tomography venography (CTV) is a diagnostic imaging procedure that uses computed tomography (CT) to visualize the veins in the body. CTV can detect deep vein thrombosis (DVT) and evaluate venous insufficiency. Advantages include the ability to capture high-resolution images and are non-invasive and efficient.[1]

Evaluation of Clinical Benefits and Potential Harms

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of computed tomography angiography (CTA) abdomen/ pelvis, including lower extremity runoff. 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:

- Inherent risk of procedure: There are inherent risks of imaging, including cumulative radiation exposure, contrast, allergy, nephrotoxicity, and contrast extravasation into surrounding tissues.[2-5]
- Potential danger to pregnancy: CT imaging completed during pregnancy confers a dose of ionizing radiation to the fetus and is generally only utilized when the potential benefits of this specific imaging modality outweigh the risks to the pregnancy.[6] Fetal risk includes fetal demise, intrauterine growth restriction, microcephaly, delayed intellectual development, risk of childhood cancer, and fetal thyroid injury.[6]
- Increased healthcare costs and complications from the inappropriate use of additional interventions.[7]

The clinical benefits of using these criteria include:

- Improved patient outcomes through timely and appropriate access to the procedure. Allam et al. (2024) reviewed CTA as a component of multi-modality imaging in vasculitis. They state that CTA is widely accessible and is widely used in large vessel vasculitis, with excellent spatial and temporal resolution. CTA may reveal both early vascular changes as well as late complications, such as stenosis, dissection, or aneurysms.[8]
- Reduction in complications and adverse effects from unnecessary procedures. The ACR-NASCI-SIR-SPR practice parameter for the performance and interpretation of body computed tomography angiography (CTA)(2021) enumerates indications for the modality's use in diagnosis and treatment of vascular aneurysms and dissections, trauma evaluation, and anatomic mapping for organ transplantation and autograft planning.[1]
- Enhanced diagnostic accuracy for complex medical conditions. Hansen (2016) reviewed the use of CTA of the abdominal aorta, stating that it has become the preferred method for planning repair, monitoring complications, and follow-up of abdominal aortic aneurysms.[9]

- Enhanced overall patient satisfaction and healthcare experience. Patients may tolerate computed tomography scanning better than magnetic resonance imaging, due to the shorter amount of time involved for the study and lower risk for claustrophobia.

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

➔ **Computed tomography angiography or venography (CTA/CTV) of the abdomen/pelvis (CPT 74191, 74174)** is considered appropriate when **ANY** of the following is **TRUE**:

- ◆ Vascular conditions, known or suspected, including **ANY** of the following:
  - Suspected renal artery stenosis, when intervention is planned if diagnosed, including **ANY** of the following:
    - Previous imaging (e.g., ultrasound) indicates small kidney or unequal kidney sizes; **OR**
    - Renal artery Doppler ultrasound suggests renal artery stenosis; **OR**
    - Early-onset hypertension (age less than 35, diastolic greater than 110 mmHg)[10]; **OR**
    - Late-onset hypertension (age greater than 50)[10]; **OR**
    - Renal artery bruit[10]; **OR**
    - Malignant or accelerated hypertension[10]; **OR**
    - Sudden development or worsening of hypertension[10]; **OR**

    - Deterioration of renal function in response to angiotensin-converting enzyme inhibitors[10]; **OR**
    - Hypertension resistant to medication, and the patient must be currently taking **ALL** of the following at maximally tolerated doses[11];
        - 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 when **ANY** of the following is **TRUE**:
    - High suspicion for ischemic enteritis/colitis or mesenteric/bowel infarct by another imaging study; **OR**
    - Anion-gap metabolic acidosis and/or high lactate in the setting of severe abdominal pain or abdominal pain that is out of proportion to the physical exam; **OR**
    - Known vascular risk factors or known vascular disease (e.g., age greater than 60 years, known coronary artery disease [CAD] or peripheral artery disease [PAD]) with severe abdominal pain or abdominal pain that is out of proportion to the physical exam; **OR**
    - Known vascular risk factors with post-prandial pain that affects daily life (e.g., fear of food, weight loss); **OR**
    - Symptoms or signs indicating lower GI bleeding; **OR**
- Thromboembolic disease; **OR**
- Concern for aneurysm when ultrasound is inconclusive or non-diagnostic, based on documented clinical or imaging findings; **OR**
- Known unrepaired aortic aneurysm over 5.4 cm in size, initial evaluation, if surgical intervention is being planned[12-13];**OR**
- Unrepaired aortic aneurysm when ultrasound and non-contrast CT are inconclusive. Follow-up evaluation is based on aneurysm size when **ANY** of the following is **TRUE**[14]:

    - 3 to 3.9 cm, every 3 years; **OR**
    - 4 to 4.9 cm, annually; **OR**
    - 5 to 5.4 cm, every 6 months; **OR**
- Preoperative planning for thoracoabdominal aortic aneurysm (TAAA) or dissection (with or without symptoms) and **ANY** of the following is **TRUE**[15]:
    - CTA of the chest has been performed; **OR**
    - Endovascular repair of thoracoabdominal aortic aneurysm (TAAA); **OR**
    - Open repair of thoracoabdominal aortic aneurysm (TAAA); **OR**
    - Follow-up after **ANY** of the following:
        - Endovascular repair of thoracoabdominal aortic aneurysm (TAAA); **OR**
        - Known thoracoabdominal aortic aneurysm (TAAA) or dissection without repair; **OR**
        - Open repair of thoracoabdominal aortic aneurysm (TAAA); **OR**
- Vascular invasion or displacement by tumor or other process; **OR**
- Assessment of patients with spontaneous coronary artery dissection (SCAD), one-time; **OR**
- Trauma, with concern for solid organ or vascular injury[1,16-17]; **OR**
- Vasculitis, initial evaluation, when **ANY** of the following is **TRUE**[1,16,18-20]:
    - Biopsy proven; **OR**
    - Rheumatologic panel work-up including but not limited to erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) is suggestive of vasculitis; **OR**
    - The outcome of the imaging is expected to change management and/or treatment plan; **OR**
- Evaluation of hepatic arteries, when ultrasound is inconclusive, nondiagnostic, or abnormal requiring confirmation; **OR**
- Evaluation of other visceral arteries, including, but not limited to, suspected superior mesenteric artery (SMA)

syndrome and median arcuate ligament syndrome (MAL)[21-22]; **OR**
- Evaluation of the portal venous system (hepatic portal system) after Doppler ultrasound has been performed; **OR**
- Diffuse unexplained lower extremity edema with negative or inconclusive ultrasound; **OR**
- Suspected venous compression syndrome (e.g., Nutcracker syndrome [renal vein compression], May-Thurner syndrome [iliac vein compression syndrome including pelvic CT venography])[23-24]; **OR**
- Large vein thrombosis of the major abdominal or pelvic veins, including inferior vena cava (IVC), iliac, renal, portal, and hepatic veins, when Doppler ultrasound is inconclusive or indicates the presence or complications; **OR**
- Detailed evaluation for pelvic congestion syndrome; **OR**
- Other, unspecified vascular findings that were inconclusive on prior imaging; **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**[,14]:
  - 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, ureteropelvic junction [UPJ] obstruction, solid organ transplant, prostate embolization); **OR**
- Renal transplant rejection/dysfunction, when ultrasound and nuclear medicine (e.g., MAG3, DTPA) scans are inconclusive or are indicative of a vascular cause of rejection or dysfunction[25]; **OR**
- Anastomotic integrity or stent patency; **OR**

- Other vascular graft complication (e.g., suspected infection, pseudoaneurysm, or thrombosis)[16]; **OR**

◆ Gastrointestinal bleeding including **ANY** of the following[14]:
- Lower gastrointestinal tract bleeding with **ANY** of the following[26]:
  - Active bleeding is clinically observed as hematochezia or melena in a hemodynamically stable patient, where colonoscopy is contraindicated or unavailable; **OR**
  - Active bleeding in a hemodynamically unstable patient or a patient who has required more than 5 units of blood within 24 hours; **OR**
  - Concern for ongoing or recurrent bleeding after treatment (e.g., colonoscopy or transcatheter angiography); **OR**
- Upper gastrointestinal bleeding (non-variceal) with **ANY** of the following[27]:
  - High suspicion of an arterial source endoscopy is contraindicated (e.g., post-surgical or traumatic cause), or inconclusive; **OR**
  - Source of bleeding is not identified on endoscopy; **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)[28-29]; **OR**
- Other syndromes not otherwise specified, follow-up as clinical documentation supports; **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.

➔ **Computed tomography angiogram and/or venography (CTA/CTV) of the abdomen/pelvis with runoff (CPT 74175, 75635)** is considered appropriate when **ANY** of the following is **TRUE**:

- Lower extremity ischemic symptoms when **ALL** of the following are **TRUE**:
  - **ANY** of the following:
    - Leg pain worsens with activity and relief with rest (claudication); OR
    - Non-healing lower extremity ulcers; **AND**
  - **ALL** of the following:
    - Limitation of performance of daily activities; **AND**
    - Expected mobility after treatment warrants revascularization; **AND**
    - Revascularization is planned[30]; **AND**
    - Abnormal ABI as evidenced by **ANY** of the following:
      - ABI is inconclusive or nondiagnostic; **OR**
      - ABI less than 0.9 or greater than 1.4 on at least one leg; **OR**
      - ABI less than 1.1 in patients with risk factors for atherosclerosis (e.g., personal history of diabetes or known cardiac disease)[31]; **OR**
- Critical limb ischemia strongly suspected (sudden onset of a cold leg with pain, gangrene, rest pain)[32]; **OR**
- Evidence of severe venous reflux disease, including venous leg ulcer, when pelvic or abdominal etiology is suspected; **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

➔ **Computed tomography angiogram and/or venography (CTA/CTV) of the abdomen/pelvis with contrast** is not considered appropriate if **ANY** of the following is **TRUE**[33]:

- ◆ The request is for CT/CTA with contrast, and the patient has a history of anaphylactic allergic reaction to iodinated contrast media.

*NOTE: The referring professional and radiologist should discuss the risks and benefits of contrast media administration, including possible prophylaxis, in patients with chronic or worsening kidney disease or severe renal failure.
**NOTE: CT in pregnant patients should be requested at the discretion of the ordering provider and obstetric care provider.
***NOTE: CT in patients with claustrophobia should be requested at the discretion of the ordering provider.

Disclaimer on Radiation Exposure in Pediatric Population

Due to the heightened sensitivity of pediatric patients to ionizing radiation, minimizing exposure is paramount. At Cohere, we are dedicated to ensuring that every patient, including the pediatric population, has access to appropriate imaging following accepted guidelines. Radiation risk is dependent mainly on the patient's age at exposure, the organs exposed, and the patient's sex, though there are other variables. The following technical guidelines are provided to ensure safe and effective imaging practices:

Radiation Dose Optimization: Adhere to the lowest effective dose principle for pediatric imaging. Ensure that imaging protocols are specifically tailored for pediatric patients to limit radiation exposure.[4,34]

Alternative Modalities: Prioritize non-ionizing imaging options such as ultrasound or MRI when clinically feasible, as they are less likely to expose the

patient to ionizing radiation. For instance, MRI or ultrasound should be considered if they are more likely to provide an accurate diagnosis than CT, fluoroscopy, or radiography.[4,34]

Cumulative Dose Monitoring: Implement systems to track cumulative radiation exposure in pediatric patients, particularly for those requiring multiple imaging studies. Regularly reassess the necessity of repeat imaging based on clinical evaluation.[4,34]

CT Imaging Considerations: When CT is deemed the best method for achieving a correct diagnosis, use the lowest possible radiation dose that still yields reliable diagnostic images.[4,34]

Cohere Imaging Gently Guideline

The purpose of this guideline is to act as a potential override when clinically indicated to adhere to Imaging Gently and Imaging Wisely guidelines and As Low As Reasonably Possible (ALARA) principles.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
72191	Computed tomographic angiography (CTA), pelvis; with contrast material(s) including non-contrast images, if performed, and image postprocessing
74174	Computed tomographic angiography (CTA), abdomen and pelvis; with contrast material(s), including non-contrast images, if performed, and image postprocessing
74175	Computed tomographic angiography (CTA), abdomen; with contrast material(s), including non-contrast images, if performed, and image postprocessing
75635	Computed tomographic angiography (CTA),

	abdominal aorta, and bilateral iliofemoral lower extremity runoff; with contrast material(s), including non-contrast images, if performed, and image postprocessing

Medical Evidence

Allam et al. (2024) review multiple imaging modalities in vasculitis. Advantages of computed tomography angiography (CTA) include its high availability and rapid execution, along with excellent spatial and temporal resolution. Additionally, coronary CTA can be performed simultaneously if there is a suspicion of coronary artery disease (CAD). A prospective study by Lariviere et al. (2016) demonstrates that CTA can identify late complications such as stenosis, dissection, or aneurysms. In another prospective study, CTA showed a sensitivity of 73% and a specificity of 78% for diagnosing giant cell arteritis compared to clinical diagnosis.[8,35]

Fernando et al. (2022) conducted a meta-analysis to assess the effectiveness of various diagnostic methods, including presenting symptoms, physical examination findings, CTA, and point-of-care ultrasound (PoCUS) in accurately identifying ruptured abdominal aortic aneurysm (rAAA). A total of 2077 patients from 20 studies were included. While classic clinical symptoms related to rAAA may lack sensitivity, their absence does not always exclude the diagnosis. CTA exhibits reasonable accuracy but may still fail to detect some instances of rAAA. PoCUS may be a valuable resource when determining the transfer of suspected rAAA patients to a vascular center.[24]

Rotzinger et al. (2020) prospectively compared three image acquisition techniques in lower extremity CT angiography. Of the 60 consecutive patients enrolled, each was randomly assigned to one of three groups: the standard anterograde technique (SA), the adaptive anterograde technique (AA), and the retrograde acquisition technique (RA). Quantitative image quality was evaluated by measuring intraluminal attenuation at 536 different levels. Additionally, occlusive or aneurysmal disease was documented for each patient and limb. The RA technique demonstrated lower attenuation compared to the SA and AA techniques. The highest and most consistent attenuation was found with the AA technique. Qualitative analysis revealed that AA had the lowest rate of non-diagnostic vascular segments, followed by SA and RA. Venous contamination was significantly higher with RA, particularly at the aortic level. The presence of stenosis or occlusion did not significantly affect attenuation values across all techniques, whereas aneurysmal disease significantly impacted luminal attenuation in AA

(increased attenuation) and RA (decreased attenuation) at the iliac and femoral levels.[36]

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