

## **Guidelines for Emergency Department Patient Cardiac CTA**

### **Admin Approval:**

### **Next Review:**

Division/Champion: Cardiothoracic Imaging/Patel/Matar

Subject: Guidelines for Emergency Department Patient Cardiac CTA

Purpose: Indications and preparation of an Emergency Department patient scheduled for a cardiac CTA

Policy: Although a non-emergent exam, in order to limit ED length of stay, this study is offered to the ED during all hours. After hours studies may result in a higher rate of indeterminate/non-diagnostic exams and need for patient recall after final interpretation.

### **Criteria for Cardiac CTA**

- Patient felt to be low to intermediate pretest likelihood of having coronary ischemia as a cause of their chest pain

### **Appropriate Indications for Cardiac CTA**

- Chest pain in low to intermediate risk patient
- Patient with possible coronary anomaly

### **Calcium Score**

- Calcium score will be performed in all patients age <40
- For calcium score values above 600, calcium score images will be reviewed by a cardiovascular imaging attending or resident on call and may result in cancellation of the contrast enhanced portion of the exam

### **Absolute Contraindications for Cardiac CTA**

- Clinical instability
- Inability to follow directions, hold breath, lie flat and still, or cooperate
- Increased cardiac enzymes, concerning for AMI
- Acute ECG changes, suggesting AMI
- Documented history of severe coronary atherosclerosis (stents, bypass)
- Irregular cardiac rhythm
- Pregnancy
- History of severe contrast reaction (anaphylaxis, respiratory/cardiovascular collapse requiring vasopressors/intubation)

### **Relative Contraindications for Cardiac CTA**

- Age <40 (unless concern for coronary anomaly) or Age >75 (more likely to have significant calcific disease, especially males)
- EGFR <30, if not on chronic dialysis. EGFR <30 must be discussed on a case by case basis with radiologist based on risk/benefit to patient
- History of less severe contrast reactions which are safe for premedication (itching, hives, bronchospasm, hypotension not requiring vasopressors or mechanical ventilation)
- Body Mass Index >50 kg/m<sup>2</sup>
- Cardiac CTA performed within the last year

#### **IV Access (See IV Access Guidelines for additional information)**

- Must support injection rates at least 5 ml/sec
- 18g preferred, 20g min

Order of location preference: 1. Right AC; 2. Right mid forearm; 3. Left AC; 4. Left mid forearm.

CT-rated (>300 PSI) central venous lines are acceptable. All other locations, such as external jugular or hand veins are unacceptable for contrast bolus delivery for cardiac CTA. Other lines or catheters must be approved by the Cardiac Imaging Team or the radiologist/resident on call.

#### **Ordering Cardiac CTA**

- EPIC order: CT Angio Cardiac Coronary Arteries IMG 12017

#### **Premedication**

- Administration of premedication is managed by the ED nursing staff
- The ordering physician will provide orders for beta blocker or other appropriate medication for heart rate control with a target heart rate of <66 bpm
- Scans **may** be performed with regular, non-arrhythmic heart rates >66 at the discretion of the Cardiac Team resident/attending
- Scans performed with heart rates >80 run a high risk of being non-diagnostic and are not performed

#### **Reporting of Results**

##### **Weekdays**

- 0800-1700 Final report in EPIC within 2 hours.
- 1700-0800 Preliminary report in EPIC within 2 hours. Final report the following morning. Any acute findings will be called to the ED.

##### **Weekends**

- 0800-0800 Preliminary report in EPIC within 2 hours. All studies performed before noon Saturday and Sunday should be finalized by early afternoon. Remainder will be finalized the next day. Any acute findings will be called to the ED.