



CLINICAL POLICY

Regadenoson Pharmacologic Stress Test

A. EFFECTIVE DATE :

March 16, 2021

B. PURPOSE :

Pharmacologic stress testing is utilized to diagnose overt or latent coronary artery disease in individuals unable to undergo exercise stress testing.

C. POLICY :

A Cardiology Fellow, Physician's Assistant, Advanced Practice Registered Nurse, or Registered Nurse will supervise individual tests with oversight by a credentialed cardiologist. All clinicians supervising stress tests must be ACLS-certified.

D. SCOPE :

INDICATIONS:

Regadenoson is a selective A2A adenosine receptor antagonist causing coronary vasodilation and increased coronary blood flow. A regadenoson pharmacologic stress test with nuclear myocardial perfusion imaging is indicated for patients unable to undergo adequate exercise stress testing and in the presence of the following conditions:

1. Inability to perform adequate exercise due to non-cardiac physical or mental limitations.
2. LBBB or ventricular pacing baseline ECG abnormalities.
3. Severe aortic stenosis

CONTRAINDICATIONS:

Absolute:

- Patients with second or third degree AV block or sinus node dysfunction without a functioning pacemaker.
- Known hypersensitivity to adenosine or regadenoson.
- Systolic blood pressure less than 90mmHg.
- Use of dipyridamole or dipyridamole containing medications within 48 hours of test.
- Use of aminophylline within 24 hours of test.
- Ingestion of caffeinated foods or beverages within 12 hours of the test.
- Use of products containing methylxanthines or theophylline containing medications.
- Unstable angina or acute coronary syndrome.
- Patients with severe COPD or asthma with active wheezing.

Relative:

- Profound sinus bradycardia (HR <40 BPM)

- Patients with mild COPD, asthma or reactive airway disease. The safety of regadenoson is not definitely established in patients with bronchoconstrictive lung disease such as asthma or COPD. Regadenoson should be used with caution in these patients. Aminophylline, bronchodilators, and resuscitative measures should be immediately available. Patients with stable asthma can be pretreated with 1 to 2 puffs of albuterol or a comparable rescue inhaler.

E. DEFINITIONS :

N/A

F. MATERIAL(S) NEEDED :

Aminophylline and IV caffeine, emergency medication and crash cart, electrodes, treadmill, CASE machine

G. PROCEDURE :

Patient Preparation:

1. Please refer to Nuclear Exercise Stress Test Protocol.

Injection:

1. Regadenoson 0.4mg/5ml should be given as a rapid injection by test supervisor over 10 seconds into a peripheral vein using a 22-gauge or larger IV catheter.
2. Administer a 5ml saline flush immediately after the injection of regadenoson.
3. Nuclear technologist administers the radionuclide myocardial perfusion imaging agent 10 to 20 seconds after the saline flush. The radionuclide may be injected directly into the same catheter as regadenoson.
4. Monitor ECG continuously during the procedure. 12 lead ECGs should be recorded every minute until the patient is stable.
5. Blood pressure should be monitored during infusion and every minute for 5 minutes into recovery.

Indications for Reversal of Regadenoson Infusion:

1. Many adverse reactions begin soon after dosing and generally resolve within 15 minutes, except for headache which resolves in most patients within 30 minutes. Oral caffeine in the form of caffeinated soda may be offered, 100-300mls as an initial reversal agent for mild adverse reactions to regadenoson, such as mild headache or mild GI distress.
2. Aminophylline may be administered in doses ranging from 50mg to 250mg by slow intravenous injection (50mg to 100mg over 30 to 60 seconds) to attenuate severe or persistent adverse reactions to regadenoson. IV caffeine citrate 60mg/3ml may be administered after 3-5 minutes x 1 dose as an alternate to Aminophylline for reversal of regadenoson. It is a P&T approved substitute if Aminophylline is not available. IV caffeine or aminophylline should be administered under the following circumstances:
 - a. Severe hypotension (systolic blood pressure <80mmHg)
 - b. Development of symptomatic, persistent second degree or complete heart block
 - c. Wheezing
 - d. Persistent chest pain or ST depression
 - e. Signs of poor perfusion (pallor, cyanosis, cold skin)
 - f. Nausea or vomiting or abdominal cramping
 - g. Headache

Critical Test Results:

1. Critical test results, as defined in Critical Test Results Protocol, should be directly communicated to the Inpatient Cardiology Service Attending and/or Stress Test Overreader as soon as safely possible. The Inpatient Cardiology Service Team should see and evaluate the patients having unresolved symptoms, persistent ischemia, or who are hemodynamically unstable. If team is unavailable, patients should be transported to the ED by the test supervisor for evaluation and treatment.

H. ATTACHMENTS :

None

I. REFERENCES :

Henzlova MJ et al. ASNC Imaging Guidelines for Nuclear Cardiology Procedures: Stress protocols and tracers. J Nuclear Cardiology 2009.

J. SEARCH WORDS :

Nuclear Stress testing, exercise testing with isotope

K. ENFORCEMENT:

Violations of this policy or associated procedures may result in appropriate disciplinary measures in accordance with University By-Laws, General Rules of Conduct for All University Employees, applicable collective bargaining agreements, the University of Connecticut Student Code, other applicable University Policies, or as outlined in any procedures document related to this policy.

L. STAKEHOLDER APPROVALS :

On File

M. COMMITTEE APPROVALS :

None

N. FINAL APPROVAL :

- | | |
|---|-----------------------------------|
| <p>1. <u>Andrew Agwunobi, MD (Signed)</u>
Andrew Agwunobi, MD, MBA
UConn Health Chief Executive Officer</p> | <p><u>03/24/2021</u>
Date</p> |
| <p>2. <u>Anne D. Horbatuck (Signed)</u>
Anne D. Horbatuck, RN, BSN, MBA
Clinical Policy Committee Co-Chair</p> | <p><u>03/24/2021</u>
Date</p> |
| <p>3. <u>Scott Allen, MD (Signed)</u>
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Clinical Policy Committee Co-Chair</p> | <p><u>03/24/2021</u>
Date</p> |
| <p>4. <u>Caryl Ryan (Signed)</u>
Caryl Ryan, MS, BSN, RN
VP Quality and Patient Services & Chief Nursing Officer</p> | <p><u>03/23/2021</u>
Date</p> |

O. REVISION HISTORY :

Date Issued: 12/2003

Date Reviewed: September 2012, October 2014, February, 2015, Revised: April 2018

Date Revised: January 2005, January 2006, January 2008, Revised: January 2009, Reviewed: January 2010.
March 2021