CLINICAL POLICY

Dobutamine Stress Echo Policy

A. EFFECTIVE DATE :

April 8, 2021

B. PURPOSE :

To provide guidelines for performing Dobutamine Stress Echo. All laboratory personnel will have knowledge of the equipment, supplies and emergency procedures of the stress test, contraindications of stress testing and indications for the termination of the test.

C. POLICY :

INDICATIONS:

1. Diagnosis of myocardial ischemia in a patient who is unable to perform adequate exercise treadmill test.
2. Indication of severity of CAD.
3. Risk stratification after acute MI.
4. Preoperative evaluation for major non-cardiac surgical procedure..
5. Evaluate for ischemia as a cause of cardiomyopathy.
6. Evaluation of valvular heart disease.

CONTRAINDICATIONS:

Table 1. Contraindications to Exercise Testing

Absolute

- Acute myocardial infarction (within 2 d)
- High-risk unstable angina*
- Uncontrolled cardiac arrhythmias causing symptoms or hemodynamic compromise
- Symptomatic severe aortic stenosis
- Uncontrolled symptomatic heart failure
- Acute pulmonary embolus or pulmonary infarction
- Acute aortic dissection

Relative†

- Left main coronary
- Moderate stenotic valvular heart disease
- Electrolyte abnormalities
- Severe arterial hypertension‡
- Tachyarrhythmia or bradyarrhythmias
- Hypertrophic cardiomyopathy and or other forms of outflow tract obstruction
- Mental or physical impairment leading to inability to exercise adequately
- High-degree atrioventricular block

*ACC/AHA Guidelines for the Management of Patients With Unstable Angina/Non-ST Segment Elevation Myocardial Infarction(350)

†Relative contraindications can be superseded if the benefits outweigh the risks.

‡In the absence of definitive evidence, the committee suggests systolic blood pressure of >200mmHg and/or diastolic blood pressure of >110 mmHg

D. SCOPE :

This policy applies to Non- invasive Cardiology Registered Nurses and Trained Echo Technicians

E. DEFINITIONS :

CAD- Coronary heart disease
MI- myocardial infarction

F. MATERIAL(S) NEEDED :

Syringes and needles in multiple sizes, intravenous stand, intravenous cannulas, Blood pressure cuff and sphygmomanometer, exam table, Echo machine and treadmill.

G. PROCEDURE :

Patient Preparations:

1. Patient should NPO for 6 hours prior to test. Patient may drink small amount of water with meds. Referring MD should determine if patient should take beta blocker before test.
2. Informed consent is signed, dated and timed by clinician supervising procedure.
3. Baseline images digitized (PLAX PSAX, A4, A2, A3)
4. IV access with 18 or 20 gauge needle.
5. Baseline EKG, Heart rate and blood pressured are taken.

Exercise:

1. Treadmill test according to patient and clinician needs. (Bruce protocol, modified Bruce, etc.)
2. Monitor BP, HR, EKG throughout test.

Dobutamine infusion:

1. Begin Dobutamine at 10 µg/Kg per minute.
2. Increase Dobutamine infusion every 3 minutes to 20, 30, 40 and 50 µg/Kg per minute or until patient develops symptoms.
3. Record HR, BP and EKG with each stage.
4. If HR isn't within 10 beats of target heart rate at 30 µg, discontinue Dobutamine and give Atropine in 0.3 mg (initial dose) to 0.5 mg. DO NOT BOLUS.
5. Digitize and store "low dose" images at 10 µg/Kg per minute dose, peak heart rate and during recovery. (PLAX, PSAX, A4, A2, A3)

Post exercise:

1. Compare images in a quad screen format. Wall thickening is compared.
2. If patient develops symptoms or persistent tachycardia after termination of the Dobutamine infusion a Beta Blocker may be administered per provider order.
3. Phentolamine is available for Dobutamine extravasation per provider order.
4. Monitor HR, BP, and 12 lead EKG for a minimum of five minutes or until it is back to baseline.
5. Interpretation of study incorporating all clinical variables. (workload, EKG changes, HR, and BP response)

End Points:

1. Target HR (85% of age predicted maximum heart rate, or if soon after myocardial infarction, 70% of age predicted maximum heart rate.
2. Development of new regional wall motion abnormality of at least moderate severity.
3. Peak dose.
4. Hypertensive BP response (>220 mmHG systolic, >110 mmHG diastolic)
5. Hypotension (>20 mmHG from previous level of infusion)
6. Intolerable symptoms.

H. ATTACHMENTS :

None

I. REFERENCES :

*ACC/AHA Guidelines for the Management of Patients With Unstable Angina/Non-ST Segment Elevation Myocardial Infarction(350)

J. SEARCH WORDS :

Dobutamine, Stress Echo, Dobutamine stress testing

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 :

1. Andrew Agwunobi, MD (Signed) 05/03/2021
Andrew Agwunobi, MD, MBA Date
UConn Health Chief Executive Officer

2. Anne Horbatuck (Signed) 05/03/2021
Anne D. Horbatuck, RN, BSN, MBA Date
Clinical Policy Committee Co-Chair

3. Scott Allen, MD (Signed) 04/29/2021
Scott Allen, MD Date
Clinical Policy Committee Co-Chair

4. Caryl Ryan (Signed) 04/29/2021
Caryl Ryan, MS, BSN, RN Date
VP Quality and Patient Services & Chief Nursing Officer

O. REVISION HISTORY :

Date Issued: 07/2005
Date Revised: 04/2021
Date Reviewed: 07/2005, 01/2007, 01/2009, 07/2010, 11/2012, 01/2015