

Non-Invasive Stress Testing Test Choice Selection Criteria

1. Exercise Stress Testing (routine, no imaging)
 - a. Preferred option in patients unless:
 - i. Unable to exercise
 - ii. Pre-excitation ECG (WPW)
 - iii. Ventricular pacing
 - iv. Abnormal resting ECG (typically > 1 mm ST depression)
 - v. LBBB
 - vi. Need to localize ischemia
 - vii. Other considerations (digoxin, LVH, women, prior CABG)
2. Stress Imaging (When to Use)
 - a. Can't exercise
 - b. Nondiagnostic baseline ECG (unable to interpret changes; e.g LBBB, paced, LVH, WPW, digoxin, etc.)
 - c. Functional significance of known previous intermediate grade/non critical obstructive CAD and ischemic localization
 - d. Intermediate Duke treadmill score
 - e. Myocardial viability
3. Exercise Stress Testing with Imaging
 - a. Always exercise if possible
 - b. Exceptions to exercise: LBBB and V. paced rhythm: pharmacologic nuclear only
4. Pharmacological Stress Testing with Imaging
 - a. Can't exercise
 - b. Ventricular paced (adenosine mibi)
 - c. LBBB (adenosine mibi)
5. Absolute contraindications to exercise stress testing
 - a. Acute MI (< 2-3 days)
 - b. High risk unstable angina
 - c. Severe symptomatic aortic stenosis
 - d. Uncontrolled arrhythmia
 - e. Uncontrolled CHF
 - f. Acute pulmonary embolus
 - g. Acute myocarditis/pericarditis
 - h. Aortic dissection
 - i. Severe resting HTN (SBP > 180)



6. Contraindications to Adenosine and Dipyridamole

- a. Asthma
- b. 2nd or 3rd degree AV block
- c. Hypotension
- d. Theophylline
- e. ? unstable carotid disease
 - i. Do not give adenosine to patients on dipyridamole!
 - ii. Avoid caffeine with vasodilator (adenosine/dipyridamole) stress testing.
Caffeine blocks vasodilator effects of adenosine/dipyridamole

7. Contraindications to Dobutamine

- a. severe HTN
- b. hypotension
- c. ventricular arrhythmias
- d. acute/subacute MI

8. Exercise Duke Treadmill Score (DTS)

- a. = exercise time (minutes) – (5x ST deviation) – (4x angina index)
- b. Angina Index:
 - i. 0 = no angina/chest pain
 - ii. 1 = angina during test
 - iii. 2 = angina stopped test
- c. example: 10 minutes exercise, 1mm ST deviation and angina during test
 - i. $DTS = 10 - (5 \times 1) - (4 \times 1) = 10 - 5 - 4 = 1$ (intermediate or moderate risk)
- d. Duke Exercise ECG Prognosis

Risk	Duke Score	4 year Survival (%)
Low	>5	99
Moderate	(-10) to (+)4	95
High	<(-)10	79

9. Choice of imaging

- a. Local expertise (either in Yakima ok)
- b. Availability
- c. Body habitus (nuclear)
- d. Myocardial viability (nuclear)
- e. LBBB (nuclear)
- f. suspect concomitant valvular heart disease (echo)
- g. Other structural heart issues (e.g. pericardial; echo)
- h. Radiation (echo)

