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 – (5x1) – (4x1) = 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)