Non-ischemic indications

- Diastolic function
- Electrocardiography
- Increased Lp(a) and LV
- Echocardiographic assessment of asymptomatic individuals
- Cardiac revascularization
- Mitral valve prolapse
- Hypertrophic cardiomyopathy
- Mitral stenosis
- Aortic valve disease
- Pulmonary hypertension
- Right-sided heart failure
- Diastolic dysfunction
- Aortic dissection
- Right ventricular dysfunction
- Cardiac sarcoidosis
- Cardiac transplantation

Ischemic indications

- Study of global and regional kinetics
- Assessment of coronary flow reserve
- Assessment of ischemia that may be induced in high-risk cardiovascular patients
- Stratification of risk and prognosis in patients with established disease (post-SCA)
- Assessment of pre-operative risk in ischemic patients, high-risk cardiovascular patients and patients with poor tolerance of physical exertion
- Etiological assessment of dyspnea due to exertion
- Follow-up subsequent to percutaneous or surgical revascularization
- Assessment of ischemia that may be induced and myocardial injury in patients with chronic ischemic heart disease
- Assessment of intermediate grade coronary artery disease (coronography/CORONARY CT scan)

Diagnosis criteria

- Maximum heart rate
- Echocardiographic positivity (new akinesia, worsening of ischemia)
- Chest pain
- Changes to ECG (alteration of st > 2 mm segment)

Dobutamine

- Indications of myocardial ischemia
- Identification of myocardial viability

Contraindications

- Repetitive atrial arrhythmias (atrial fibrillation, supraventricular paroxysmal tachycardia)
- Complex ventricular arrhythmias (polymorphic extrasystoles, ventricular tachycardia)
- Moderate to severe arterial hypertension

Dosage scheme

1 fl dobutamine (250 mg in 30 ml) + 20 ml saline solution (concentration 5000 y/ml)

- Infusion speed (ml/h)
  - 5 minutes: 3.9
  - 10 minutes: 7.8
  - 20 minutes: 15.6
  - 30 minutes: 31.2
  - 40 minutes: 62.4

Dipyridamole

- Indications of myocardial ischemia
- Contraindications

Contraindications

- 2nd and 3rd degree AV block
- Sinus node disease
- Bronchial asthma
- Significant carotid artery stenosis (common or internal carotid artery > 50%)

Dosage scheme

Dipyridamole (10 mg/ml) by body weight to be administered slowly by bolus in 6 minutes

<table>
<thead>
<tr>
<th>Number of vials to administer</th>
<th>Weight of patient (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>50-65</td>
</tr>
<tr>
<td>60</td>
<td>66-75</td>
</tr>
<tr>
<td>70</td>
<td>75-90</td>
</tr>
<tr>
<td>80</td>
<td>90-100</td>
</tr>
<tr>
<td>90</td>
<td>100-110</td>
</tr>
</tbody>
</table>

Dosage

Low dose: 50 mg in 5 ml
High dose: 100 mg in 10 ml

**SUSTAINED IMPROVEMENT**

**NORMAL**

**ISCHEMIA**

**VITAL**

**VITAL ISCHEMIC**

**NO CHANGE**

**NECROSIS**

**POSITIVE**

**NEGATIVE**

**NEGATIVE**

**POSITIVE**

**NO**

**YES**

**STRESS ECG**

**PHYSICAL STRESS ECHOCARDIOGRAM**

**Dobutamine (positive effect)**

- Low dose: assessment of viability (10 mg/ml)
- High dose: assessment of ischemia (20 mg/ml)
  - atropine (0.5 mg/ml)
  - Dipyridamole
  - Aminophylline

**Dipyridamole (vasodilatory effect)**

- Maximum dose: 0.8 mg/ml in 6 min
  - Dipyridamole
  - Atropine
  - Aminophylline

**Explain the rationale behind administering a stress test with medications**

**Stress echocardiography**

- Assessment of intermediate grade coronary artery disease
- Coronary angiography

**Follow Up**

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**Follow Up**