Pharmacological Stress Echocardiography

Introduction
Patients with heart disease may not have symptoms at rest. This applies in particular in coronary artery disease, in which there is narrowing of coronary artery but the supply of blood to heart muscle is adequate at rest. Exercise increases demand of blood supply to heart muscle which is not supported in the presence of arterial narrowing. The change can be picked up by different methods. When a patient cannot do exercise well, drugs can be used instead to induce stress. Pharmacological stress echocardiography (PSE) detects a change in heart contraction during and after drug infusion by the use of an echocardiogram.

Importance of Procedure
PSE can be used to diagnose coronary heart disease or to assess its severity. It is also helpful in measuring physical fitness of patients with known heart attack. If PSE is refused, we may not give an appropriate diagnosis or prognosis of your heart disease. Alternative methods include other forms of stress tests (such as exercise treadmill, radionuclide test or magnetic resonance), or cardiac catheterization.

Pre-Procedure Preparation
• The test is often performed as an outpatient procedure.
• Please stop medication as advised by your doctor.
• Light meal can be taken, but preferably at least 2 hours before the test.
• Elderly will preferably be accompanied by relatives or friends.
• Our staff will explain to you and your relatives the details of the procedure together with the possible risks and complications. You have to sign an informed consent.
• An intravenous drip will be set up, and allergic history will be asked.

The Procedure
• You will be asked to lie on a stretcher.
• Drugs (such as dobutamine) will be given intravenously in a dose adjusted to your body weight, and at different infusion rates.
• Echocardiographic images will be obtained.
• Attending doctor and nurse will continuously monitor your symptoms, electrocardiogram and blood pressure to minimize the risk.
• Infusion will be stopped when different sets of images are obtained, or when you develop signs and symptoms.
• The examination room will be equipped with necessary equipment for emergency resuscitation.

Post-Procedure Care
• You will be asked to rest for 20-30 minutes after the test before leaving is allowed.
• If we consider your medical problem being severe, we may admit you to ward for further management.
Post-Procedure Follow-Up

- Your doctor may have explained to you the result of the test. If not, during subsequent follow-up, your doctor will explain to you the result and discuss with you the subsequent plan of management. You are advised to ask your close relatives to join the interview.

Risks

- The procedure carries certain risks, including cardiac arrhythmias, acute myocardial infarction or even cardiac arrest and death (<0.1%). (Reference 1)
- Minor complications include allergy to dobutamine, nausea, shortness of breath, transient arrhythmias or hypotension.

Remarks

- It is hard to mention all the possible consequences if this procedure is refused.
- The list of complications is not exhaustive and other unforeseen complications may occasionally occur. The risk quoted is in general terms.
- Should a complication occur, another life-saving procedure or treatment may be required immediately.
- If there is further query concerning this procedure, please feel free to contact your nurse or your doctor.

Reference 1:
ACC/AHA Guideline Update for the Clinical Application of Echocardiography 2003