播道醫院 Evangel Hospital

Information on Pharmacological Stress Echocardiography

Introduction

Patients with heart disease may not have symptoms at rest, as in those with narrowed coronary artery but the blood supply to heart muscle is adequate at rest, but become deficient when stressed during exercise. Exercise is the usual form of stimulation used in Stress Test for assessment of the heart condition. Patients unable to exercise will be given other forms of stress such as by drug, Pharmacological stress Echocardiography (PSE). Electrocardiogram (ECG) is usually used to assess the heart condition when the patient is moving as during exercise. When ECG is not adequate assessment or when patient is not moving (as in PSE), echocardiogram should be used as an alternative.

Importance of Procedure

1. Patients with or suspected to have coronary artery disease, may be assessed by PSE. Significance of valvular lesions can also be evaluated (as echocardiogram is performed).
2. It is useful for determining long term prognosis of heart disease and pre assessment before non-cardiac surgery. Alternative methods include other forms of stress tests (such as exercise stress echocardiography), radionuclide exam, magnetic resonance imaging, cardiac catheterization, or CT coronary angiogram.

Pre-Procedure Preparation

1. It is an outpatient procedure, preferably you should be accompanied by relatives or friends.
2. 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.
3. Please fast before the test, as the drug may induce nausea and vomiting.
4. Some medicine and food items need to be stopped, as advised by your doctor.
5. We will check your allergy history.

The Procedure

1. You will be asked to lie on left lateral position, and put on intravenous drip and ECG monitoring..
2. Pharmacological agents (usually IV dobutamine or atropine, adenosine and persantin) will be used to stimulate the heart to a heart rate as determined by the doctor according to your condition.
3. Echocardiographic images will be obtained at different infusion rates for interpretation by the doctor.
4. You will continuously be monitored on symptoms, ECG, BP and heart rate to minimize the risk of the test.
5. The drug infusion will be stopped once the image acquisition is finished or when you develop symptoms.

Post-Procedure Care

1. You may develop transient symptoms like chest discomfort, shortness of breath, palpitation, dizziness during and after the examination and you will be asked to take rest for 30 minutes before discharge.
2. If your symptoms persist or if the doctor feels it is necessary, you may be admitted to the ward for further management.
3. The result of the test will be explained to you by doctor during follow up.

Common Risks and Complications

1. Major complications including significant cardiac arrhythmia or cardiac arrest is less than 0.1%.
2. Minor complications include: allergy to drugs, nausea, shortness of breath, palpitation, dizziness or hypotension.
3. If a complication developed, another treatment procedure may be required immediately.

Remarks

This is general information only and the list of complications is not exhaustive. Other unforeseen complications may occasionally occur. In special patient groups, the actual risk may be different. For further information please contact your doctor. Evangel Hospital reserves the right to amend this leaflet without prior notice. We welcome suggestions or enquiries on the information provided in this leaflet. Please contact our Healthcare professionals so that we could follow up and make improvement.

Reference

1. ACC/AHA: *"Guideline Update for the Clinical Application of Echocardiography" (2003)*
2. Hospital Authority: *"Pharmacological Stress Echocardiography" (2019)*
Smart Patient: http://www.ekg.org.hk/pilic/public/Cardiac_PILIC/Cardiac_PharmStressEchocardiography_0023_eng.pdf (12-07-2023)

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