

Introduction

Patients with heart disease may not have symptoms at rest. This applies in particular in those with coronary artery disease, in which there is narrowing of coronary artery but the supply of blood to heart muscle is maintained at rest. Exercise increases demand of blood supply to heart muscle which is not matched in the presence of arterial narrowing. This induces symptoms or a change of different markers. In those patients having ECG not suitable for assessment, exercise stress echocardiography (ESE) provides an alternative by the use of an echocardiogram to detect a change in heart contraction during and after exercise. In addition, ESE is also useful in assessing haemodynamic significance of some valvular heart disease.

Importance of Procedure

ESE can be used to diagnose heart disease or to assess its severity. The test is especially useful for diagnosing coronary heart disease. It is also helpful in measuring physical fitness of patients with known heart attack. If ESE is refused, we may not be able to provide you with an appropriate diagnosis or prognosis of your heart disease. Alternative methods include other forms of stress tests (such as pharmacological stress echocardiography, radionuclide test or magnetic resonance), cardiac catheterization, or CT coronary angiogram.

The Procedure

1. Firstly, doctor (or sonographer) will perform resting echocardiography on you.
2. You will then be asked to walk on a motor driven treadmill at progressively increasing speed and/or inclination, or to ride on a static bike, until you achieve a target heart rate (according to your age and medical condition), or develop significant electrocardiogram changes, or symptoms or signs.
3. Our attending medical staff will continuously monitor your symptoms, electrocardiogram, blood pressure and heart rate to minimize the risk of the test.
4. The treadmill room will be equipped with necessary equipments for emergency resuscitation.
5. You will be asked to quickly lie on a stretcher upon stopping exercise, so that doctor (or sonographer) can acquire the necessary post-stress images with the echo machine as soon as possible.

Preoperative Preparation

1. The test is often performed as outpatient procedures.
2. Please put on sportswear and sport shoes for the tests.
3. Light meal can be taken, but preferably at least 2 hours before the test.
4. Preferably you should be accompanied by relatives or friends.
5. 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.

Post-Procedure Care

1. You will be asked to rest for 20-30 minutes after the test before you are allowed to leave.
2. If your medical problem is assessed to be serious, you may be admitted to the medical ward for further management.
3. You will be explained the result of the test during your follow up. Please ask your close relatives to join in the discussion.

Risks

1. The procedure carries certain risks, including cardiac arrhythmias, acute myocardial infarction or even cardiac arrest and death. It was reported that there was 1 in 2500 risk of myocardial infarction and death. (Reference 1).
2. It is hard to mention all the possible consequences if this procedure is refused.
3. The list of complications is not exhaustive and other unforeseen complications may occasionally occur. The risk quoted is for general reference only.
4. If a complication developed, another life-saving procedure or treatment may be required immediately.
5. If there are further concerns about this procedure, please feel free to contact our medical staff.

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. Stuart RJ Jr, Ellestad MH. "National survey of exercise stress testing facilities" Chest. 1980;77(1):94-97.
2. Hospital Authority: "Exercise Stress Echocardiography" (2019)
Smart Patient: http://www.ekg.org.hk/pilic/public/Cardiac_PILIC/Cardiac_ExerciseStressEchocardiography_0114_eng.pdf (12-07-2023)