



Service Priorities and Programmes
Electronic Presentations

Convention ID: 369

Submitting author: Ms Pauline Wai Kuen FONG

Post title: Physiotherapist I, Prince of Wales Hospital, NTEC

The Implementation of Incremental Shuttle Walking Test (ISWT) as an assessment tool in Cardiac Rehabilitation Phase II post coronary artery bypass graft (CABG) patients in PWH: A trial

Fong WK, Kam SW, Ho SY, Cheng YK, Wong I

Physiotherapy Department, Prince of Wales Hospital

Keywords:

cardiac rehabilitation

physiotherapy

assessment

Incremental shuttle walking test

exercise testing

Introduction

Exercise testing is recommended before Cardiac Rehabilitation Phase II (CRP II) for high risk patients. Exercise testing with treadmill and lung function test (LFT) are common in cardiac rehabilitation as pre-screening and outcome measures respectively. Incremental shuttle walking test (ISWT) is one of the field tests used as exercise testing. The patient is required to walk up and down a 10-meter course, with the walking speed (12 level protocol) dictated by a prerecorded audio signal. In literature, ISWT is recommended as a measure of exercise capacity in cardiac rehabilitation, it is considered more suitable for the elderly rehabilitation population who perform poorly on a treadmill test and is a cost-effective alternative. There have been reports of a good correlation between ISWT and peak VO₂ in patients with heart failure. It is also important to objectively measure improvements in exercise tolerance prior to and at the completion of cardiac rehabilitation.

Objectives

Few patients at PWH undergone open heart surgery were referred for CRP II because of lack of exercise testing previously. This trial aims to test the feasibility in implementing ISWT as exercise testing and outcome measures in CRP II.

Methodology

With the consensus of team physician, ISWT by physiotherapists was implemented for exercise testing and outcome measure prior to and after CRP II. Seven patients below 70 years old with EF >50% undergone elective CABG were invited to attend a trial CRP II. ISWT with closely telemetry monitoring, LFT were performed pre-operatively, post-operatively, pre-CRP II, post-CRP II and three months after CRP II.

Result

Seven patients (5 males and 2 females) completed the CRP II. All of them had ISWT

done without any technical difficulties and myocardial events. There were significant increase on ISWT distance ambulated and Force Vital Capacity result (FVC) within subjects after the completion of CRP II, $p < 0.001$. Pairwise comparison showed significant increase when comparing LFT post-operatively and three months post CRP II, $p = 0.034$. ISWT distance was significantly correlated with FVC, particularly in pre CRP II, post CRP II and three months post CRP II, $p < 0.05$. The high correlation between FVC and ISWT distance suggest that the ISWT can be used as one of the outcome measures in cardiac rehabilitation. Furthermore, study with more patients performing ISWT exercise test is needed to determine the applicability of ISWT as an alternate exercise test prior cardiac rehabilitation