The Effect of Customization Of Treadmill Walking Skill On The Evaluation Of Baseline Functional Capacity In Phase II Cardiac Rehabilitation Program
Or SK
Physiotherapy Department, Ruttonjee Hospital

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Introduction
In phase II Cardiac Rehabilitation Program (CRP), the pre-CRP Exercise Stress Test (EST) is used to evaluate patient’s baseline functional capacity which is essential for exercise prescription and outcome evaluation in subsequent CRP, and it carries strong diagnostic and prognostic values. In order to facilitate patients to exhibit their full potential, an optimal duration of test from 8 to 12 minutes is suggested. Failure to manage the pace well on the moving belt may lead to early termination of the exercise stress test, resulting in possible under-estimation of patient’s baseline capacity. It is believed that customization of patients’ essential walking skill on treadmill would facilitate their performance reference in pre-CRP EST.

Objectives
To investigate the effect of introducing a treadmill walking trial session for patients’ skill customization on the evaluation of their baseline functional capacities before joining the phase II cardiac rehabilitation program.

Methodology
Prior to the pre-CRP EST, patients in the study group were arranged to a trial walk on treadmill for 20 to 30 minutes, starting at a low speed of 1.5 to 2.0 kilometer/hour (km/h) with gradual increment at 0.1km/h per minute, till reaching 4.0 km/h in speed or 70% of patient’s age predicted maximum heart rate. Close monitoring was provided throughout the session to ensure safety. Pre-CRP EST was arranged within the subsequent week and then continued the normal CRP.

Result
Patients who received the trial walk sustained significantly longer duration in the pre-CRP EST (8.88±2.32 vs. 6.95±1.68, p=0.002). It indicated patients’ better
exercise endurance after being prepared for the essential skill on treadmill walking. Under-estimation of the baseline capacity in pre-CRP EST due to early termination of the exercise stress test was possible in those without trial walking session, who could hardly balance on the moving belt of treadmill. Therefore, the trial walk would facilitate patients to demonstrate their best baseline capacity, promoted test accuracy and secured training safety during the rehabilitation course. For effective resource allocation, only those who find treadmill walking difficult should be targeted specifically for the trial walk. It is advised to expand the study to investigate the effects of the trial walk on different sub-groups (e.g. elderly or sedentary), for establishing screening criteria to precisely identify the needs.