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Pre-operative Physiotherapy Program for Total Knee Replacement Patients to Pace Way for Shorter Length of Stay

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Introduction

Knee osteoarthritis (OA knee) is one of the most disabling musculoskeletal conditions in the elderly. Total knee replacement (TKR) is the ultimate treatment for end stage OA knee. With the increasing demand for TKR in Hong Kong, optimization of patients' physical status and regular exercise habit establishment before the surgery are the prerequisites for the acceleration of post-operative rehabilitation.

A course of 10 sessions of pre-operative physiotherapy program, had been implemented in AHNH since July 2015 for TKR patients. They were empowered to actively participate in rehabilitation, and prepared for post-operative early mobilization.

Objectives

(1) To optimize patient's physical status before TKR, and (2) to empower patient for active rehabilitation and post-operative early mobilization.

Methodology

This is a prospective study. Patients scheduled for TKR were recruited in the pre-operative physiotherapy program. In addition to home exercises instruction, training for lower limbs strength, walking balance and aerobic capacity, as well as educational talk on the whole rehabilitation pathway were included. A knowledge quiz was done to evaluate patient's understanding on importance of active exercise and readiness for post-operative early mobilization. Outcome measures included Numeric Pain Rating Scale (NPRS), walking tolerance, Timed Up and Go Test (TUG) and 30 Seconds Chair Stand Test.

Result

A total of 174 patients completed the program with 153 underwent unilateral TKR and 21 underwent bilateral TKR. Mean age was 68.7. The program significantly improved patient's TUG (decreased from 17.3s to 14.1s, $p < 0.001$), 30 Seconds Chair Stand Test scores (from 6.9 to 9.8, $p < 0.001$), and alleviated knee pain in terms of NPRS (from 6.6 to 5.7, $p < 0.001$). In addition, there was a significant enrichment in the

knowledge of exercise benefits (from 33% to 77%, $p < 0.001$), revealing the improvement of patients' awareness of active exercise. Patients were more prepared for early mobilization, which could translate into shorter length of stay.

Conclusion:

The pre-operative physiotherapy exercise and education program was effective in improving physical status and reducing pain. It also led to better exercise adherence and readiness for post-operative early mobilization, paving way for shorter length of stay.