



Service Priorities and Programmes Electronic Presentations

Convention ID: 504

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Perioperative Physiotherapy Program in Enhanced Recovery After Surgery (ERAS) for Colorectal Surgery Improves Patients' Outcome - A Pilot Program at TKOH

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Keywords:

Perioperative Care

ERAS

6-Minute Walk Test

Prehabilitation

Colorectal surgery

Introduction

Colorectal cancer is the commonest cancer in Hong Kong (4979 cases diagnosed in 2014). Enhanced Recovery After Surgery (ERAS) facilitates recovery, shorten length of stay (LOS) and reduces complications through multidisciplinary collaboration to optimize patient's condition. Patients who undergo surgery with lower functional capacity have higher risk of developing complications, requiring prolonged hospitalization and substantial resources. Identifying high risk patients may facilitate clinical decision and resource allocation. 6-Minute Walk Test (6MWT) is a tool for pre-operative risk stratification. To improve outcome for colorectal patients, our Perioperative Physiotherapy Program (ERAS) included 6MWT, prehabilitation and early post-operative mobilization.

Objectives

1. To evaluate the effectiveness of the Program in reducing post-operative pulmonary complications (PPCs) and LOS
2. To evaluate the usefulness of 6MWT for risk stratification

Methodology

Pre-operative Phase:

Patients diagnosed with colorectal cancer and scheduled for surgery were referred for assessment including respiratory condition and 6MWT.

Prehabilitation:

Tailored-made home-based prehabilitation exercises were prescribed to optimize

physical capacity.

Post-operative Phase:

Chest physiotherapy and early graded mobilization were provided starting on post-operative day(POD) 1. Patients' management, progress and discharge plan were discussed during Combined Ward Round. Before discharge, patient's feedback was collected by questionnaire.

Result

From 2/2016 to 12/2016, 79 patients participated in the Program. Mean age was 68.3+9.6. Mean 6MWT distance was 404 meters (range160–629m). Mean prehabilitation period was 29 days. 93% mobilized out of bed on POD1-2. PPCs were low (1%). Median LOS reduced by 22.2% after program implementation. All participants performed exercises at least 3times/week pre-operatively, 97% patients agreed that home-based exercises were useful in preparation for surgery. 6MWT distance was negatively correlated with medical complications (MC) using Pearson's correlation ($r=-0.28, p=0.014$) and can be a predictor of MC by simple linear regression ($p=0.033$). Optimal cut-off distance using receiver operating characteristics curve was 326m ($p=0.016$, Sensitivity=75%, Specificity=80%). Post-operative LOS in group below 326m in 6MWT was significantly longer by Mann-Whitney U test (mean difference=2.31days, $p=0.019$).

Conclusions

This Program showed that physiotherapy can enhance recovery and shorten LOS in colorectal patients. Pre-operative 6MWT is useful for predict post-operative morbidity and facilitates individualized perioperative management. Additional resource is suggested to sustain this program in future.