Service Priorities and Programmes

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The effectiveness of Physiotherapy for patients after Total Knee Replacement and the relationship between Physical measures and Length of Stay

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Introduction

Elderly with advanced arthritis usually presents functional inability and poor quality of life. Total Knee Replacement (TKR) is an end-stage treatment to relieve pain and reduce disability. Physiotherapy plays a crucial role in pre-operative education and post-operative rehabilitation to maximize patient's mobility level and functional independency to facilitate discharge.

Objectives

This study aims to determine the effectiveness of in-patient physiotherapy rehabilitation for patients after TKR and the relationship between physical measures and Length of Stay (LOS).

Methodology

Patients clinically admitted for TKR were recruited. Pre-morbid social history and body mass index (BMI) were recorded as well as Oxford Knee Score (OKS) was collected before operation. All patients received pre-operative and post-operative physiotherapy assessment and intervention. (1) Pain level in walking with Numeric Pain Rating Scale (NPRS); (2) Active Range of Motion (AROM) of affected knee flexion (3) Time-Up and Go Test (TUGT); (4) Elderly Mobility Scale (EMS) were used as primary outcomes. They were recorded in assessments before operation, at the first walk after operation (within 3 to 5 days post operation) and upon discharge. Length of Stay (LOS) since admission was also recorded.

Result

Results 49 patients (12 males and 37 females; mean age = 64.6 +/- 7.7 years old) receiving TKR were recruited from August 2012 to December 2013. With post-operative physiotherapy on pain-relieving and mobility training, patients showed improvement in physical condition and functional level at discharge. (1) Pain level (NPRS) in walking was significantly alleviated from 4.77 (SD2.89) to 2.82 (SD1.87)

with 95% CI 0.90 to 3.01 ($p<0.001$); (2) Percentage of patients who had active knee flexion range more than or equal to 90 degree was increased from 6.1% to 28.6%; (3) 10.2% of patients could perform TUGT at the first walk while 91.8% could perform it at discharge; (4) EMS score improved from 7.0 (SD 4.80) at first walk to 16.5 (SD 3.22) at discharge with 95% CI-10.86 to -8.24 ($p<0.001$). The mean of LOS was 18.1 +/- 5.6 days. 100% patients were discharged back home. Correlation matrix shows LOS had statistically significant fair correlations with OKS ($p\leq0.05$); but not with BMI, age or NPRS (pain level at first walk). Conclusion Physiotherapy is effective to rehabilitate patients after TKR in reducing pain and improving mobility level to facilitate early discharge. However, only physical findings could not statistically predict LOS. In view of LOS and medical costs, we have to evaluate current service delivery model and there is room for further development.