



Service Priorities and Programmes
Electronic Presentations

Convention ID: 229

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Enhanced Recovery Service Model for Total Knee Replacement in Caritas Medical Centre

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Keywords:

Enhanced Recovery

Total Knee Replacement

Introduction

Total knee replacement (TKR) operation is the most commonly performed elective surgery in orthopedics, with its impact on health care system reflected by establishment of KPI and Joint centers.

Objectives

To adopt a new pilot system for TKR service improvement in the Department of Orthopedics, Caritas Medical Centre.

Methodology

The Enhanced Recovery Service Model was adopted, including:

1. Assigning a whole day list (Monday) to accommodate 3 elective TKR operations
2. Introduction of Same Day Surgery (SDS)
3. One out of 3 cases per week was randomly selected to adopt the Fast-track protocol. Differences compared with conventional protocol include: - pre-operative doctor/nursing specialist and allied health assessment, training and education - walking exercise on day 1 - established discharge criteria - early outpatient training after discharge
4. Introduction of combination of periarticular local analgesia infiltration (LIA) and intra-articular Transamin injection
5. Outcome measures included post-operative length of stay (LOS), in-hospital pain and functional score assessment, and Barthel Index upon discharge.

Result

1. 6-month productivity in 3-4Q increased from 53 (2015), 45 (2016) to 69 (2017), i.e. a 30-50% increase in TKR operations.
2. Improved SDS utilization by 29%. Overall 38% patients received SDS, compared to 6.5% (n=77) in 2016 and 9.4% (n=32) in 1-2Q 2017. In the SDS group, pre-operative LOS reduced from 1-3 to 0 days.
3. 19 (28%) patients utilized the Fast-track protocol. Average post-operative LOS reduced by 3.7 days (13.6 days in Fast-track versus 17.3 days in the conventional

group). The target of “discharging within 14 days” was 74% versus 17.3%. Barthel index was 84 versus 87.

4. Overall LOS for all TKR was 16.3 days, compared with 18.2 days in 2016 and 18.7 days in 2015.

5. Combined periarticular LIA and intra-articular Transamin was given in 34 patients, and isolated Transamin injection given in another 15 patients. There was no wound or vascular complications upon discharge. In the LIA group, NPRS (Numeric Pain Rating Scale) improved from 5.7 pre-operatively to 2.8 upon discharge. In the non-LIA group using femoral nerve block, NPRS improved from 6.3 to 3.4.