

ORIGINAL ARTICLE

Fast-track recovery technique applied to primary total hip and knee replacement surgery. Analysis of costs and complications☆



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KEYWORDS

Total knee replacement;
Total hip replacement;
Rapid recovery;
Fast-track recovery

Abstract

Purpose: To determine the cost reduction and complication rates of using an enhanced recovery pathway (Fast-track) when compared to traditional recovery in primary total hip replacement (THR) and total knee replacement (TKR), as well as to determine if there were significant differences in complication rates.

Materials and methods: Retrospective review of 100 primary total arthroplasties using the Fast-track recovery system and another 100 using conventional recovery. Gender, Charlston comorbidity index, ASA score, length of stay and early complications were measured, as well in-hospital complications and those in the first six months, re-admissions and transfusion rates. The total and daily cost of stay was determined and the cost reduction was calculated based on the reduction in the length of stay found between the groups.

Results: Both groups were comparable as regards age, gender, ASA score, and Charlston index. The mean reduction in length of stay was 4.5 days for TKR and 2.1 days for THR. The calculated cost reduction was 1266 euros for TKR and 583 euros for THR. There were no statistically significant differences between groups regarding in-hospital complications, transfusion requirements, re-admissions and complication rates in the first six months.

Discussion: There are few publications in the literature reviewed that analyse the cost implications of using fast-track recovery protocols in arthroplasty. Several published series comparing recovery protocols found no significant differences in complication rates either. The use of a

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PALABRAS CLAVE

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Recuperación rápida;
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fast-track recovery protocol resulted in a significant cost reduction of 1266 euros for the TKR group and 583 for the THR group, without affecting complication rates.

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Técnica de recuperación acelerada (fast-track) aplicada a cirugía protésica primaria de rodilla y cadera. Análisis de costos y complicaciones

Resumen

Objetivo: Determinar el ahorro económico que supone la implantación de un sistema de recuperación rápida (fast-track) al compararlo con el método de recuperación convencional en artroplastia primaria de cadera (ATC) y rodilla (ATR). Asimismo, determinar si existen diferencias entre ambos en el índice de complicaciones.

Material y métodos: Estudio retrospectivo descriptivo, incluyendo 100 artroplastias primarias utilizando el método fast-track y 100 utilizando recuperación convencional. Las variables comparadas entre ambos grupos fueron edad, sexo, índice de comorbilidad de Charlson, ASA, estancia media, complicaciones intrahospitalarias y durante los primeros seis meses e índice de reingresos y transfusiones. Se determinó el coste global para cada procedimiento y por día de ingreso, y el ahorro se calculó según la reducción de la estancia media.

Resultados: Ambos grupos fueron comparables en cuanto a edad, sexo, ASA e índice de Charlson. La reducción de la estancia media hospitalaria fue de 4,5 días para el grupo de ATR y 2,1 días para el de ATC. El ahorro calculado fue de 1.266 euros para el grupo de ATR y de 583 euros en el de ATC. No se observaron diferencias significativas en cuanto a complicaciones intrahospitalarias, necesidad de transfusiones, reingresos y complicaciones durante los primeros 6 meses.

Discusión: Existen pocos trabajos de análisis de costos en relación con la implantación de sistemas de recuperación rápida en cirugía protésica. Diversas series publicadas tampoco observaron un mayor índice de complicaciones utilizando este método. La utilización del método fast-track representó un ahorro de 1.266 euros para el grupo de ATR y de 583 euros para el grupo de ATC sin aparente repercusión sobre el índice de complicaciones.

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Introduction

Over the recent years, total hip and knee replacement surgeries have become 2 of the most common procedures in orthopaedic surgery.¹ In this setting, there are various measures that can optimise the perioperative processes.² The implementation of multidisciplinary systems of rapid recovery has made it possible to reduce average hospital stay, early complications and the overall cost of these procedures, without modifying the index of risks and complications,^{3,4} patient satisfaction,⁵ or the need for rehabilitation.⁶ However, the current literature includes few studies that quantify the economic savings that the implantation of these systems can represent with respect to the conventional protocols.⁷

The objectives of this study were to determine the economic savings that the implementation of a fast-track recovery system in primary total hip and knee replacement surgery represented, and to analyse the differences in the index of complications when comparing it to a conventional postoperative system.

Materials and method

A retrospective study including a total 200 patients was carried out. Fifty patients that had total knee replacement (TKR) and 50 patients that had total hip replacement (THR) using the conventional recovery system were randomly chosen during the January–December 2013 period (control group). In the fast-track recovery group (case group), the first 50 patients that had TKR and the first 50 that had THR since the protocol was implanted in our centre in January 2014. The characteristics and the main differences between both recovery are shown in [Table 1](#).

To establish sample homogeneity, the variables recorded for both groups were age, sex, Charlston comorbidity index and the ASA score. To evaluate the differences obtained between the 2 recovery protocols, the variables recorded were mean stay, index of in-hospital complications, index of readmissions, need for transfusions and complications during the first 6 months.

The financial department at the centre where the study was performed calculated the costs based on invoice data

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