

ORIGINAL ARTICLE

Arthroplasty knee registry of Catalonia: What scientific evidence supports the implantation of our prosthesis? ☆



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KEYWORDS

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Abstract

Introduction: In our environment, it is increasingly necessary to perform an activity based on scientific evidence and the field of prosthetic surgery should be governed by the same principles. The national arthroplasty registries allow us to obtain a large amount of data in order to evaluate this technique. The aim of our study is to analyse the scientific evidence that supports the primary total knee arthroplasties implanted in Catalanian public hospitals, based on the Arthroplasty Registry of Catalonia (RACat).

Material and methods: A review of the literature was carried out on knee prostheses (cruciate retaining, posterior stabilised, constricted and rotational) recorded in RACat between the period 2005–2013 in the following databases: Orthopedic Data Evaluation Panel, PubMed, Trip-Database and Google Scholar. The prostheses implanted in fewer than 10 units (1358 prostheses corresponding to 62 models) were excluded.

Results: 41,947 prostheses (96.86%) were analysed out of 43,305 implanted, corresponding to 74 different models. In 13 models (n = 4,715) (11.24%) no clinical evidence to support their use was found. In the remaining 36 models (n = 13,609) (32.45%), level IV studies were the most predominant evidence.

Conclusions: There was a significant number of implanted prostheses (11.24%) for which no clinical evidence was found. The number of models should be noted, 36 out of 110, with fewer than 10 units implanted. The use of arthroplasty registries has proved an extremely useful tool that allows us to analyse and draw conclusions in order to improve the efficiency of this surgical technique.

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PALABRAS CLAVE

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Registro de artroplastias de rodilla de Cataluña: ¿qué evidencia científica respalda la implantación de nuestras prótesis?

Resumen

Introducción: En nuestro medio es cada vez más necesario realizar una actividad basada en evidencia científica y el campo de la cirugía protésica deberían regirse por los mismos principios. Los registros nacionales de artroplastias permiten evaluar los resultados de esta práctica. El objetivo de nuestro trabajo es analizar la evidencia científica que respalda los modelos de artroplastia total de rodilla implantados en los hospitales públicos catalanes sobre la base del Registro de Artroplastias de Cataluña (RACat).

Material y métodos: Se realizó una revisión de la literatura de las prótesis de rodilla (conserva cruzado posterior, estabilizada posterior, constreñida y rotacional) registradas en el RACat entre 2005 y 2013 en las siguientes bases de datos: Orthopaedic Data Evaluation Panel, PubMed, Trip-Database y Google Académico. Se excluyeron aquellas prótesis implantadas en número inferior a 10 unidades (1.358 prótesis correspondientes a 62 modelos).

Resultados: De las 43.305 prótesis implantadas, se analizaron 41.947 (96,86%), correspondientes a 74 modelos diferentes. En 13 modelos (n = 4.715) (11,24%) no se encontraron evidencias clínicas que respaldasen su uso. En los 36 modelos restantes (n = 13.609) (32,45%) predominaban los estudios de nivel IV, con una baja evidencia.

Conclusiones: Existe un número significativo de prótesis implantadas (11,24%) en las cuales no se ha encontrado evidencia científica. Cabe destacar el número de modelos, 36 de un total de 110, con implantación inferior a 10 unidades. La implantación de un registro de artroplastias se ha revelado como una herramienta extremadamente útil que permite analizar y extraer conclusiones que permitan mejorar la eficiencia de esta técnica quirúrgica.

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Introduction

In the current climate of continuous technological innovations and advances, there are an increasing number of prosthetic implants available to us. In light of this, it is appropriate that we should have information based on scientific evidence on the different models available to us, to promote clinical practice based on evidence-based medicine.

The arthroplasty registries were started through the scientific societies as a method to monitor and assess the various existing prosthetic models after they have been marketed.¹⁻¹⁰ Although they cannot replace the methodological rigour of clinical trials, they offer information on long term effectiveness and safety and through their results enable efficiency and quality of care to be improved.^{11,12}

The Arthroplasty Knee Registry of Catalonia (RACat) was set up in 2005 thanks to the common interest of the Catalan Health Service (CatSalut), the Catalan Society of Orthopaedic Surgery and Traumatology (SCCOT) and the Agency for Health Quality and Assessment of Catalonia (AQuAS). The AQuAS was the body in charge of completing the project. Hospitals use a CatSalut computer application to send data on patients, prostheses, surgical interventions and procedures to RACat. Initially, for reasons of plausibility, only hip and knee prostheses were included. This information was provided by 53 of the 61 centres of the Integral Public Healthcare System of Catalonia (SISCAT) that cover more than 85% of public activity.¹³⁻¹⁵

Countries like the United Kingdom, have set up complementary organisations in addition to an arthroplasty registry under their national health system, such as the Orthopaedic Data Evaluation Panel (ODEP)¹⁶ that serves as a benchmark to evaluate data in monitoring various prostheses, many of which have been implanted in our country. We can find recent studies in the literature that use the ODEP platform to demonstrate the level of evidence for all the prostheses planted in the UK. Two clear examples are the systematic total hip prosthesis reviews performed by Kynaston-Pearson et al.,¹⁷ and by Chaverri-Fierro et al.,¹⁸ in particular, since they used the RACat database.

The objective of this study was to analyse the scientific evidence behind primary knee arthroplasty (PKA) implantation in Catalonia's public hospitals.

Material and methods

Source of information

From the information available from the RACat¹⁹ models were identified that were implanted in total knee arthroplasty procedures performed in Catalonia between 2005 and 2013. Cruciate retaining, posterior stabilised, constricted and rotating primary total knee prostheses were chosen. Revision, unicompartmental, patellofemoral and tumour prostheses were excluded due to their low incidence. We also excluded implants placed in amounts of 10 units or

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