

Risk factors associated with revision for prosthetic joint infection after hip replacement

July 25 2018

Researchers from the Musculoskeletal Research Unit at the University of Bristol have identified the most important risk factors for developing severe infection after hip replacement. Patients who are under 60 years of age, males, those with chronic pulmonary disease, diabetes and a higher body mass index are at increased risk of having the joint replacement redone (known as revision) due to infection. The research also showed that some patients are at risk of early infection whilst others are more prone to late infection after hip replacement.

The study, published in *The Lancet Infectious Diseases*, and funded by the National Institute for Health Research (NIHR), considered the risk of infection following first-time (primary) [hip replacement](#). This study used data from the National Joint Registry for England, Wales, Northern Ireland and the Isle of Man linked to the Hospital Episode Statistics database and is the largest study to analyse data from over 600,000 primary hip replacement [patients](#), of whom 2,705 underwent revision for infection.

Total hip replacement, used mainly to treat pain and disability caused by osteoarthritis, is a common procedure with over 100,000 operations performed annually in the UK. A rare but serious complication affecting about one per cent of patients is deep infection. This causes considerable distress and frequently requires long and protracted treatments including revision.

This study showed the surgical approach used by the surgeon and the implant materials influenced the risk of needing revision surgery for infection. Hip replacements performed via a posterior surgical approach and those that used implant bearings that contained ceramic were less likely to be revised for an infection. Hip replacements performed for a hip fracture were at higher risk of infection. Interestingly, the experience of the surgeon and the size of the orthopaedic centre had no or only small effects on risk of revision for infection.

Uniquely, the research identified that these important factors have a different effect according to the post-operative period considered, with co-morbidities such as dementia influencing early revision for prosthetic joint infection and liver diseases influencing long-term revision. This is an important factor to consider when conducting further research in this area as just considering overall risk or short-term risk may mean important effects are missed entirely.

Mr Michael Whitehouse, Consultant Senior Lecturer in Trauma and Orthopaedic Surgery in the Musculoskeletal Research Unit of the Bristol Medical School: Translational Health Sciences (THS), said: "The results of this work are very useful to me as a surgeon and to my patients. It gives me the information I need to accurately advise patients about their risk of this devastating complication when undergoing hip replacement. The study also enables me to plan my surgery to minimise the risk for patients, for example using the posterior approach and ceramic heads. It will also provide information for the development of new patient resources to provide patients with better information to make decisions about their treatment."

Dr. Erik Lenguerrand, Research Fellow in the Musculoskeletal Research Unit and lead author of the study, added: "We have shown that certain types of patients, such as those with liver disease, are at particular risk of long-term infection and they would benefit from extra surveillance and

tailored information following their discharge from hospital to reduce this risk."

The researchers found that the risk of revision for infection following primary hip replacement is mainly driven by patient and surgical factors. The potentially modifiable factors identified in this study should be considered by clinicians when preparing patients for [hip replacement surgery](#). It will be important to carry out research to establish if changes to the management of these conditions changes the risk of infection. It is equally important for clinicians to consider the factors that can't be changed and the factors that exhibit time specific effects on the risk of prosthetic joint infection, to support and inform patients appropriately pre-operatively.

The research team will carry out further work to determine if similar patterns and risk factors are also seen for knee replacement. Finally, the researchers will also be looking at the treatment of [infection](#) when it does occur to see what treatment results in the best outcomes for patients. They will analyse further data from the National Joint Registry and are currently conducting a large multinational randomised controlled trial to generate the best evidence possible in this area.

More information: 'Risk factors associated with revision for prosthetic joint infection after hip replacement: a prospective observational cohort study' by Erik Lenguerrand, Michael R Whitehouse, Andrew D Beswick, Setor K Kunutsor, Ben Burston, Martyn Porter, Ashley W Blom in *The Lancet Infectious Diseases*, www.thelancet.com/journals/lan...rticle/PIIS1473-3099

Provided by University of Bristol

Citation: Risk factors associated with revision for prosthetic joint infection after hip replacement (2018, July 25) retrieved 10 May 2024 from <https://medicalxpress.com/news/2018-07-factors-prosthetic-joint-infection-hip.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.