Summary of research proposal LROI

Title:
Difference in TKA and UKA revision rates between 'RSA-tested' and 'non-RSA-tested' designs in matched patients. A Dutch arthroplasty registry-based study (2007 – 2022).

Authors: RGHH Nelissen, TJN van der Lelij, PJ Marang- van de Mheen, BL Kaptein, BGCW Pijls

Abstract:
This study will conduct a patient-level analysis to investigate if the previously found average lower all-cause revision rate of 'Radiostereometric analysis (RSA)-tested', compared to 'non-RSA-tested', total knee arthroplasty (TKA) and unicondylar knee arthroplasty (UKA) designs is actually implant-dependent or rather caused by patients characteristics and selection. Using patient-level data from the Dutch arthroplasty register (LROI) also allows to more specifically evaluate revisions caused by aseptic loosening, as RSA is a method for the early detection of implants likely to fail as a result of aseptic loosening. We will include all primary TKA and UKA procedures from the LROI from 2007 until 2022. Results from two previous meta-analysis, one on TKA and another on UKA, will be used to determine which designs were RSA-tested or not, and then linked (blinded) to the LROI data. The all cause revision rate and revision due to aseptic loosening of RSA-tested and non-RSA-tested implants will be compared after matching patients on their baseline characteristics to reduce confounding by indication, using propensity score matching.

Approval date: July 2022