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PREDICTORS OF POOR OUTCOME (HIGH USE OF NON-STEROIDAL ANTI-INFLAMMATORY DRUGS) AT YEAR 1 FOLLOWING TOTAL KNEE/HIP ARTHROPLASTY: THE PRESS-UP COHORT STUDY

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Purpose: Implant survival is the most accepted measurement of total knee (TKA) or hip arthroplasty (THA) results. There is a need for short-term surrogates for revision for both research and monitoring purposes. We have shown that highest utilisation of non-steroidal anti-inflammatory drugs (NSAIDs) in the first year following surgery is related to increased revision risk, and hence a useful surrogate for “poor outcome”. We therefore aimed to identify predictors of high NSAID use at year 1 after TKA and THA surgery.

Methods: Study design and population: We used data from the Catalan Joint Registry (RACAT), and linked it (85% linked) to computerized primary care records and pharmacy invoice data (SIDIAP Database). We identified patients aged ≥ 40 years undergoing primary TKA/THA for osteoarthritis registered in the resulting dataset in the period 1/1/2005–31/07/2012). We excluded patients receiving revision surgery in the first year post-surgery.

- Outcome assessment: NSAID utilisation was measured using pharmacy invoice data, and quantified in number of Daily Defined Doses (DDD) according to the WHO ATC/DDD index. We classified patients in the top quintile (percentile 80 and over) of utilisation as those with a “poor outcome”.
- Potential predictors: we defined a priori a set of predictors of poor outcome based on previous knowledge and biological plausibility, including: age, sex, socio-economic status, Charlson co-morbidity index, alcohol drinking, smoking status, body mass index, stroke/TIA, ischaemic heart disease, peripheral arthropathy, depression/anxiety disorders, type 2 diabetes mellitus, previous fracture, chronic kidney failure, COPD, use of atypical analgesics (gabapentin, pregabalin or tricyclic antidepressants) in the previous year, use of NSAIDs in the previous year.
- Analysis: Backwards stepwise logistic regression (p-entry 0.05, p-exit 0.1) models were fitted to identify predictors of good outcome (as defined above).

Results: 22,221 and 10,173 patients undergoing TKA and THA for osteoarthritis were included. Female sex, lower socio-economic status, obesity, previous use of atypical analgesics, and amount of NSAIDs used in the year prior to surgery were associated with “poor outcome” in both THA and TKA patients [Figure, top and bottom respectively]. Conversely, Charlson co-morbidity index had an effect on poorer outcome for TKA patients, and a history of depression/anxiety disorders was related to poorer outcome following THA, but had no significant effect on the other subpopulation.

Conclusions: We report for the first time on a set of predictors of “poor outcome” as defined on the basis of NSAID usage during the first year following TKA surgery. A predictive tool can be built using these in order to target patients who would benefit the least from this surgical procedure. A validated version of such tool would be of interest for patients, clinicians and health-care managers.

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BISPHOSPHONATE USE AND IMPROVED IMPLANT SURVIVAL: A NATION-WIDE COHORT STUDY

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Purpose: Osteolysis and aseptic loosening are the most common cause of revision arthroplasty worldwide. Bisphosphonates might improve implant survival through their anti-osteoclast effects. We aimed to study the association between bisphosphonate use and implant survival.

Methods: A retrospective cohort study was conducted within the Danish nationwide registries (5.5 million residents). We identified patients aged ≥ 40 years undergoing total joint replacement (TJR) during the study period (1998–2007) using ICD10 codes. Patients with inflammatory arthritides, bone Paget, hip fracture and use of DMARDs were excluded. Each participant was followed up until end of study, date of emigration, revision surgery, or patient's death, whichever came first. Participants were classified as bisphosphonate users (BPU) if they had been on treatment for at least 6 months. A time-varying exposure was used to avoid immortal-time bias. Up to six BP non-users (BPNU) undergoing arthroplasty were matched to each BPU using propensity scores. Stratified Cox regression was used to model implant survival according to bisphosphonate use. Further, we studied the association between duration of use, adherence (medication possession ratio=MPR), and timing of therapy initiation (pre-op vs post-op) and implant survival. Finally, we tested for a-priori defined interactions

