**SUPPLEMENTARY MATERIAL**

**MULTIPLE IMPUTATION**

Linear regression was used to impute DAS28-CRP and HAQ-DI (70 and 67 % missing, respectively). Explanatory covariates used for imputation were: sex; age at surgery; rheumatoid arthritis (RA) disease duration; year of surgery; municipality; follow up time; outcome status; pre-existing chronic obstructive pulmonary disease; pre-existing diabetes mellitus; pre-existing ischemic heart disease; a history of hospitalisation due to infection; Charlson Comorbidity Index; seropositive vs seronegative RA; treatment history with conventional synthetic DMARD; treatment history with biological DMARD; treatment history with glucocorticoids.

All covariates included in final models, including interaction terms, were entered in the imputation model. Twenty data sets were imputed and the results were combined using Rubin’s rules.

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Supplementary Figure 1. Flow-chart of included patients.

**SUPPLEMENTARY TABLES**

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| **Supplementary Table 1. Conditions and ICD-10 codes used for adjustment for comorbidities.** |
| **Condition** | **ICD-10 codes** |
| Chronic obstructive pulmonary disease  | J41-J44 |
| Ischemic heart disease | I20-I25 |
| Diabetes mellitus (type I and II) | E10-E14 |
| Obesity | E65-E66, E68.9 |
| **Infections requiring hospitalization** |
| Influenza and pneumonia | J09-J18, J69 |
| Urinary tract infection | N30, N39 |
| Endocarditis | I33, I38-I39 |
| Meningococcal infection, Streptococcal sepsis, other sepsis and other unspecified bacterial infections | A39-41, A46, A48, A49.9 |
| Herpes Zoster | B02 |
| Septic arthritis and osteomyelitis | M00-01, M86 |
| Post-procedure infection | T81.4 |
| **Abbreviations**. ICD-10, International Classification of Diseases 10th edition  |

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| **Supplementary Table 2. Conditions, weights and ICD-10 codes included for the modified Charlson Comorbidity Index.** |
| **Condition** | **Weight** | **ICD-10 codes** |
| Myocardial infarct | 1 | I21;I22;I23 |
| Congestive heart failure | 1 | I50; I11.0; I13.0; I13.2 |
| Peripheral vascular disease | 1 | I70; I71; I72; I73; I74; I77 |
| Cerebrovascular disease | 1 | I60-I69; G45; G46 |
| Dementia | 1 | F00-F03; F05.1; G30 |
| Chronic pulmonary disease | 1 | J40-J47; J60-J67; J68.4; J70.1;J70.3; J84.1; J92.0; J96.1; J98.2; J98.3 |
| Ulcer disease | 1 | K22.1; K25-K28 |
| Mild liver disease | 1 | B18; K70.0-K70.3; K70.9; K71; K73; K74; K76.0 |
| Diabetes | 1 | E10.0, E10.1; E10.9, E11.0; E11.1; E11.9 |
| Hemiplegia | 2 | G81; G82 |
| Moderate or severe renal disease | 2 | I12; I13; N00-N05; N07; N11; N14; N17-N19; Q61 |
| Diabetes with end organ damage | 2 | E10.2-E10.8; E11.2-E11.8 |
| Any tumour | 2 | C00-C75 |
| Leukaemia | 2 | C91-C95 |
| Lymphoma | 2 | C81-C85; C88; C90; C96 |
| Moderate or severe liver disease | 3 | B15.0; B16.0; B16.2; B19.0; K70.4; K72; K76.6; I85 |
| Metastatic solid tumour | 6 | C76-C80 |
| AIDS | 6 | B21-B24 |
| **Abbreviations**. AIDS: Acquired immune deficiency syndrome; ICD-10, International Classification of Diseases 10th edition. |

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| **Supplementary Table 3: Risk of any-cause revision, prosthetic joint infection (PJI) and death with adjustment for Charlson Comorbidity Index among patients with rheumatoid arthritis (RA) compared with osteoarthritis (OA) following total hip or knee arthroplasty.** |
|  | **Any-cause revision** | **PJI** | **Death** |
| **Univariate** | **Multivariate** | **Univariate** | **Multivariate** | **Univariate** | **Multivariate** |
| **SHR (95% CI)** | **SHR (95% CI)** | **SHR (95% CI)** | **SHR (95% CI)** | **HR (95% CI)** | **HR (95% CI)** |
| **RA vs OA** | 0.80 (0.65-0.99) | 0.71 (0.57-0.89) | 1.59 (1.23-2.04) | 1.47 (1.14-1.90) | 1.27 (1.02-1.58) | 1.24 (1.00-1.54) |
| **Female vs male** | 0.91 (0.85-0.98) | 0.94 (0.88-1.01) | 0.72 (0.65-0.80) | 0.70 (0.63-0.78) | 0.63 (0.58-0.69) | 0.57 (0.52-0.62) |
| **Age at surgery in years** | 0.98 (0.98-.98) | 0.98 (0.98-.98) | 1.01 (1.00-1.01) | 1.01 (1.00-1.01) | 1.08 (1.07-1.09) | 1.07 (1.07-1.08) |
| **Calendar year of surgery** | **2000-02** | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| **2003-05** | 0.93 (0.83-1.04) | 0.91 (0.82-1.02) | 1.11 (0.91-1.35) | 1.10 (0.90-1.33) | 0.88 (0.77-1.00) | 0.83 (0.72-0.94) |
| **2006-08** | 1.06 (0.95-1.17) | 1.02 (0.92-1.14) | 1.18 (0.99-1.42) | 1.20 (1.00-1.45) | 0.76 (0.67-0.86) | 0.74 (0.65-0.85) |
| **2009-11** | 1.14 (1.02-1.27) | 1.08 (0.97-1.21) | 1.03 (0.86-1.24) | 1.05 (0.87-1.26) | 0.66 (0.58-0.75) | 0.64 (0.56-0.73) |
| **2012-14** | 1.18 (1.03-1.35) | 1.10 (0.96-1.26) | 1.08 (0.89-1.30) | 1.07 (0.88-1.29) | 0.50 (0.43-0.58) | 0.46 (0.39-0.53) |
| **Duration of surgeryin hours** | 0.87 (0.79-0.97) | 0.91 (0.83-1.01) | 1.25 (1.15-1.35) | 1.23 (1.12-1.35) | 1.38 (1.30-1.46) | 1.25 (1.14-1.36) |
| **Previously hospitalized w/ infection**  | 1.40 (1.27-1.54) | 1.54 (1.39-1.70) | 2.12 (1.86-2.40) | 1.98 (1.73-2.26) | 2.79 (2.54-3.06) | 1.97 (1.79-2.17) |
| **Charlson Comorbidity index** | **0** | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| **1** | 0.95 (0.86-1.04) | 0.96 (0.87-1.06) | 1.41 (1.23-1.63) | 1.26 (1.10-1.46) | 1.9 (1.77-2.23) | 1.60 (1.42-1.80) |
| **2** | 0.90 (0.80-1.01) | 0.93 (0.83-1.05) | 1.05 (0.88-1.26) | 0.94 (0.78-1.13) | 2.53 (2.24-2.86) | 1.92 (1.70-2.17) |
| **3 ≤** | 0.92 (0.80-1.05) | 0.91 (0.79-1.04) | 1.72 (1.45-2.03) | 1.36 (1.15-1.62) | 4.52 (4.04-5.04) | 3.09 (2.75-3.47) |
| Abbreviations: 95% CI, 95% confidence interval; HR, hazard ratio; SHR, sub-hazard ratio. |

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| **Supplementary Table 4: Risk of any-cause revision, prosthetic joint infection (PJI) and death following total hip or knee arthroplasty among biological DMARD (bDMARD) treated compared with not bDMARD-treated rheumatoid arthritis patients registered in DANBIO. Adjusted for Charlson Comorbidity Index (CCI).** |
|  | **10-year risk of revision** | **1-year risk of PJI** | **1-year risk of death** |
| **Univariate, n=1946** | **Multivariate, n = 1936** | **Univariate, n= 1946** | **Multivariate,n = 1936** | **Univariate, n= 1946** | **Multivariate, n = 1936** |
| **HR (95% CI)** | **HR (95% CI)** | **HR (95% CI)** | **HR (95% CI)** | **HR (95% CI)** | **HR (95% CI)** |
| **bDMARD vs no bDMARD** | 1.59 (0.74-3.38) | 1.69 (0.79-3.60) | 1.51 (0.71-3.19) | 1.57 (0.72-3.42) | 1.24 (0.46-3.32) | 1.52 (0.56-4.14) |
| **Female vs male** | 1.55 (0.68-3.54) | 1.52 (0.66-3.48) | 1.89 (0.79-4.53) | 2.06 (0.85-4.98) | 1.09 (0.43-2.75) | 0.97 (0.38-2.47) |
| **Age at surgery in years** | 1.02 (0.99-1.05) | 1.02 (0.99-1.05) | 0.99 (0.97-1.02) | 0.99 (0.97-1.02) | 1.13 (1.07-1.18) | 1.13 (1.07-1.19) |
| **Calendar year of surgery** | **2000-10** | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| **2011-14** | 1.30 (0.54-3.14) | 1.24 (0.50-3.09) | 0.63 (0.29-1.38) | 0.61 (0.27-1.36) | 1.31 (0.56-3.06) | 1.08 (0.44-2.62) |
| **Duration of surgery in hours** | 0.89 (0.35-2.23) | 0.94 (0.37-2.36) | 1.35 (0.56-3.23) | 1.26 (0.48-3.31) | 2.80 (1.35-5.82) | 3.37 (1.61-7.05) |
| **csDMARD**  | 1.11 (0.55-2.26) |  | 1.25 (0.65-2.41) |  | 2.26 (1.01-5.04) |  |
| **Glucocorticoid**  | 1.87 (0.82-4.26) |  | 2.31 (1.09-4.89) |  | 3.68 (1.58-8.60) |  |
| **Previously hospitalied w/ infection**  | 1.34 (0.66-2.71) |  | 1.99 (1.03-3.83) |  | 3.47 (1.56-7.75) |  |
| **CCI** | **0** | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| **1** | 0.76 (0.29-1.97) | 0.73 (0.28-1.90) | 1.49 (0.65-3.39) | 1.59 (0.68-3.70) | 2.49 (0.95-6.55) | 2.02 (0.77-5.35) |
| **2** | 1.36 (0.52-3.53) | 1.27 (0.48-3.34) | 0.95 (0.28-3.22) | 1.09 (0.32-3.77) | 1.86 (0.51-6.77) | 1.40 (0.38-5.15) |
| **3 ≤** | 0.62 (0.15-2.59) | 0.59 (0.14-2.57) | 2.50 (1.05-5.95) | 3.00 (1.26-7.15) | 2.78 (0.87-8.88) | 2.10 (0.65-6.83) |
| **Serostatus** | **Seronegative** | Ref. |  | No events |  | No events |  |
| **Seropositive (IgM-RF or ACPA)** | 2.77 (0.67-11.55) |  | 38 events |  | 24 events |  |
| **DAS28-CRP** | 0.70 (0.44-1.13) |  | 1.98 (1.28-3.05) |  | 1.49 (1.01-2.20) |  |
| **HAQ-DI** | 1.48 (0.64-3.43) |  | 1.51 (0.68-3.36) |  | 2.68 (1.30-5.53) |  |
| Abbreviations: 95% CI, 95% confidence interval; ACPA, anti-citrullinated protein antibody; csDMARD, conventional synthetic DMARD; DAS28-CRP, disease activity score using the 28-joint count and C-reactive protein; HAQ-DI, health assessment questionnaire disability index; HR, hazard ratio; IgM-RF, Immunoglobuline M rheumatoid factor; SHR, sub-hazard ratio. |

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| **Supplementary Table 5: Ten-year risk of prosthetic joint infection (PJI) and death among patients with rheumatoid arthritis (RA) compared with osteoarthritis (OA) following total hip or knee arthroplasty.**  |
|  | **10-year risk of prosthetic joint infection** | **10-year risk of death** |
| **Univariate** | **Model 1** | **Model 2** | **Univariate** | **Model 1** | **Model 2** |
| **SHR (95% CI)** | **SHR (95% CI)** | **SHR (95% CI)** | **HR (95% CI)** | **HR (95% CI)** | **HR (95% CI)** |
| **RA vs OA** | 2.02 (1.70-2.39) | 2.11 (1.78-2.49) | 1.84 (1.55-2.18) | 1.38 (1.29-1.40) | 1.83 (1.71-1.96) | 1.58 (1.47-1.69) |
| **Female vs male** | 0.77 (0.71-0.84) | 0.75 (0.69-0.82) | 0.76 (0.70-0.83) | 0.80 (0.77-0.82) | 0.63 (0.62-0.65) | 0.65 (0.64-0.67) |
| **Age at surgery in years** | 1.00 (1.00-1.00) | 1.00 ((1.00-1.01) | 1.00 (0.99-1.00) | 1.09 (1.09-1.09) | 1.09 (1.09-1.10) | 1.09 (1.09-1.09) |
| **Calendar year of surgery** | **2000-02** | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| **2003-05** | 0.99 (0.87-1.13) | 1.00 (0.88-1.14) | 0.99 (0.87-1.13) | 0.94 (0.91-0.98) | 0.96 (0.92-0.99) | 0.94 (0.90-0.97) |
| **2006-08** | 0.98 (0.86-1.11) | 1.00 (0.87-1.12) | 1.00 (0.88-1.14) | 0.82 (0.79-0.85) | 0.87 (0.84-0.91) | 0.86 (0.82-0.89) |
| **2009-11** | 0.90 (0.79-1.02) | 0.91 (0.80-1.03) | 0.92 (0.81-1.05) | 0.75 (0.71-0.79) | 0.81 (0.77-0.86) | 0.79 (0.75-0.84) |
| **2012-14** | 0.96 (0.84-1.11) | 0.97 (0.84-1.12) | 0.98 (0.84-1.13) | 0.70 (0.64-0.77) | 0.74 (0.67-0.81) | 0.71 (0.64-0.76) |
| **Duration of surgery in hours** | 1.29 (1.22-1.37) |  | 1.27 (1.19-1.36) | 1.22 (1.19-1.25) |  | 1.12 (1.08-1.16) |
| **Previously hospitalised w/ infection**  | 1.85 (1.68-2.05) |  | 1.70 (1.53-1.90) | 2.12 (2.05-2.20) |  | 1.50 (1.44-1.55) |
| **Ischaemic heart disease** | 1.51 (1.27-1.81) |  | 1.22 (1.02-1.47) | 2.32 (2.20-2.45) |  | 1.46 (1.38-1.55) |
| **COPD** | 1.67 (1.42-1.96) |  | 1.32 (1.11-1.56) | 2.76 (2.62-2.90) |  | 1.96 (1.86-2.06) |
| **Diabetes Mellitus** | 1.69 (1.46-1.95) |  | 1.42 (1.22-1.64) | 1.96 (1.86-2.06) |  | 1.64 (1.56-1.73) |
| Abbreviations: 95% CI, 95% confidence interval; COPD, chronic obstructive pulmonary disease; HR, hazard ratio; SHR, sub-hazard ratio. |

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| **Supplementary Table 6. Mortality rates and hazard ratios for death among rheumatoid arthritis (RA) compared with osteoarthritis (OA) patients stratified by years 0-1 and 1-10 after primary total hip or knee arthroplasty.**  |
|  | **Year 0-1** |  | **Years 1-10** |
| **Cohort** | **At risk, n** | **PYRS** | **Deaths n** | **Crude MR / 1000 PYRS** | **Unadj. HR** | **Adj. HR** |  | **At risk, n** | **PYRS** | **Deaths n** | **Crude MR / 1000 PYRS** | **Unadju. HR** | **Adj. HR** |
| **RA** | 3912 | 3750 | 87 | 23.2 | 1.27(1.02-1.58) | 1.26(1.01-1.56) |  | 3511 | 18 254 | 763 | 41.8 | 1.39(1-29-1.50) | 1.62(1.51-1.75) |
| **OA** | 120 498 | 115 193 | 2085 | 18.1 | Ref. | Ref. |  | 107 115 | 549 497 | 16 375 | 29.8 | Ref. | Ref. |
| Abbreviations: adj. HR, adjusted hazard ratio; MR, mortality rate; PYRS, person years; Unadj. HR, unadjusted hazard ratio;  |

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| **Supplementary Table 7: Ten-year risk of prosthetic joint infection (PJI) and death following total hip or knee arthroplasty among biological DMARD (bDMARD) treated compared with not bDMARD-treated rheumatoid arthritis patients registered in DANBIO.** |
|  |  | **PJI** | **Death** |
|  |  | **Univariate, n= 1946** | **Basic Model, n = 1946** | **Adjusted model, n =1938** | **Univariate, n= 1946** | **Basic Model, n = 1946** | **Adjusted model, n =1858** |
|  |  | **SHR (95% CI)** | **SHR (95% CI)** | **SHR (95% CI)** | **HR (95% CI)** | **HR (95% CI)** | **HR (95% CI)** |
| **bDMARD vs no bDMARD** | 1.38 (0.78-2.45) | 1.39 (0.77-2.49) | 1.45 (0.75-2.80) |  1.40 (1.01-1.94) | 1.82 (1.31-2.54) | 1.35 (0.92-1.99) |
| **Female vs male** | 1.18 (0.67-2.06) | 1.19 (0.68-2.09) | 1.11 (0.61-2.04) | 0.70 (0.53-.92) | 0.62 (0.47-0.82) | 0.57 (0.32-1.01) |
| **Age at surgery in years** |  | 1.00 (0.98-1.02) | 1.00 (0.98-1.02) | 1.01 (0.98-1.03) | 1.09 (1.08-1.11) | 1.10 (1.08-1.12) | 1.09 (1.06-1.12) |
| **Calendar year of surgery** | **2000-10** | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| **2011-14** | 0.79 (0.41-1.52) | 0.74 (0.39-1.43) | 0.93 (0.44-1.97) | 1.81 (1.05-3.12) | 1.49 (0.86-2.59) | 0.96 (0.39-2.35) |
| **Duration of surgery in hours** | 0.62 (0.26-1.48) | 0.60 (0.25-1.45) | 0.60 (0.24-1.48) | 0.80 (0.57-1.14) | 0.89 (0.62-1.27) | 1.89 (1.01-3.52) |
| **TNFi**  | 1.23 (0.67-2.25) |  |  | 1.35 (0.97-1.89) |  |  |
| **csDMARD**  | 1.17 (0.72-1.92) |  |  | 1.36 (1.02-1.81) |  |  |
| **Methotrexate**  | 1.28 (0.75-2.16) |  |  | 1.40 (1.03-1.91) |  |  |
| **Glucocorticoid** | 1.67 (0.89-3.11) |  | 1.54 (0.76-3.14) | 1.91 (1.35-2.71) |  | 1.65 (1.08-2.51) |
| **Previously hospitalised w/ infection**  | 1.59 (0.96-2.61) |  |  | 2.55 (1.96-3.32) |  |  |
| **Ischaemic heart disease** | 2.36 (1.02-5.44) |  |  | 2.31 (1.41-3.79) |  |  |
| **COPD** | 1.46 (0.63-3.39) |  |  | 1.61 (1.00-2.61) |  |  |
| **Diabetes Mellitus** | 1.35 (0.58-3.13) |  |  | 1.66 (1.08-2.56) |  |  |
| **Ischaemic heart disease, COPD or DM** | 1.25 (0.67-2.34) |  |  | 1.94 (1.42-2.65) |  |  |
| **Serostatus** | **Seronegative** | Ref. |  |  | Ref. |  |  |
| **Seropositive (IgM-RF or ACPA)** | 3.54 (1.11-11.27) |  |  | 1.25 (0.82-1.91) |  |  |
| **DAS28-CRP** |  | 1.10 (0.82-1.47) |  | 1.82 (1.21-2.74) | 1.21 {1.00-1.48) |  | 1.18 (0.95-1.47) |
| **HAQ-DI** |  | 1.12 (0.76-1.67) |  |  | 1.60 (1.14-2.25) |  | 1.43 (0.97-2.12) |
| Abbreviations: 95% CI, 95% confidence interval; ACPA, anti-citrullinated protein antibody; COPD, chronic obstructive pulmonary disease; csDMARD, conventional synthetic DMARD; DAS28-CRP, disease activity score using the 28-joint count and C-reactive protein; DM, diabetes mellitus; HAQ-DI, health assessment questionnaire disability index; HR, hazard ratio; IgM-RF, Immunoglobuline M rheumatoid factor; SHR, sub-hazard ratio; TNFi, tumour necrosis factor-alpha inhibitor. |

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| **Supplementary Table 8. Exploratory 1-year mortality risk analysis investigating a potential dose-response relation in glucocorticoid users with doses of > 7.5 mg vs ≤ 7 .5 mg compared with non-users as reference; and analysing the impact of glucocorticoid injections compared with non-users.** |
|  | **Univariate,****N=1914 \*** | **+ age and sex,****N=1914** | **+ bDMARD exposure,****N=1914** | **+ DAS28 and duration of surgery, N=1411 \*\*** |
| Glucocorticoid non-users, N= 1705 | 1 (Ref.) | 1 (Ref.) | 1 (Ref.) | 1 (Ref.) |
| Glucocorticoid user, ≤7.5 mgN= 130 | 3.42 (1.14-10.22) | 3.76(1.25-11.31) | 3.73(1.20-11.60) | 3.32 (1.06-10.41) |
| Glucocorticoid user, >7.5 mgN= 79 | 5.66(1.89-16.92) | 5.99(2.00 - 17.98) | 5.94(1.91-18.48) | 4.16(1.32-13.08) |
| **IMPACT OF GLUCOCORTICOID INJECTIONS** |
|  | **Univariate, N=1717** | **+ age and sex,N=1717** | **+ bDMARD exposure, N=1717** | **+ DAS28 and duration of surgery,****N=1227** |
| Glucocorticoid non-users,N = 1656 | 1 (Ref.) | 1 (Ref.) | 1 (Ref.) | 1 (Ref.) |
| Received intraarticular/intramuscular glucocorticoid injection§,N= 61 | 5.91 (1.71 - 20.42) | 7.38 (2.11-25.81) | 7.41 (2.12-25.94) | 10.80 (2.93-39.80) |
| **ANY GLUCOCORTICOID EXPOSURE WITHIN 90 DAYS PRIOR TO SURGERY** |
| Glucocorticoid non-users,N = 1656 | 1 (Ref.) | 1 (Ref.) | 1 (Ref.) | 1 (Ref.) |
| Glucocorticoid users (injection or pills) | 3.57 (1.56-8.16) | 3.64 (1.59-8.33) | 3.54 (1.50-8.34) | 3.18 (1.31-7.72) |
| + : further adjusted for in multivariable analysis. **\*** 32 glucocorticoid treated but with no dosage info.\*\* 502 missing data on DAS28 in year preceding surgery.§ ≤ 90 days prior to surgeryAbbreviations: bDMARD, biological disease modifying anti-rheumatic drug; DAS28, disease activity score using 28 joint-count. |

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| **Supplementary Table 9. Exploratory analysis of 1-year risk of prosthetic joint infection investigating a potential dose-response relation in glucocorticoid users with doses of > 7.5 mg vs ≤ 7.5 mg compared with non-users as reference; and analysing the impact of glucocorticoid injections compared with non-users.** |
|  | **Univariate,****N=1914 \*** | **+ age and sex,****N=1914** | **+ bDMARD exposure,****N=1914** | **+ DAS28 and duration of surgery, N= 1227 \*\*** |
| Glucocorticoid non-users, N= 1705 | 1 (Ref.) | 1 (Ref.) | 1 (Ref.) | 1 (Ref.) |
| Glucocorticoid user, ≤7.5 mgN= 130 | 1.36(0.41-4.46) | 1.34(0.41-4.41) | 1.23(0.37-4.14) | 1.21(0.35-4.15) |
| Glucocorticoid user, >7.5 mgN= 79 | 3.10(1.09-8.83) | 3.51 (1.23-10.05) | 3.22(1.10-9.45) | 3.21(1.07-9.67) |
| **IMPACT OF GLUCOCORTICOID INJECTIONS** |
|  | **Univariate, N=1717** | **+ age and sex,N=1717** | **+ bDMARD exposure, N=1717** | **+ DAS28 and duration of surgery,****N=1227** |
| Glucocorticoid non-users,N = 1656 | 1 (Ref.) | 1 (Ref.) | 1 (Ref.) | 1 (Ref.) |
| Received intraarticular/intramuscular glucocorticoid injection§,N= 61 | 0.97 (0.13-7.13) | 0.93 (0.13-6.86) | 0.93 (0.12-6.82) | 1.35(0.18-10.12) |
| **ANY GLUCOCORTICOID EXPOSURE WITHIN 90 DAYS PRIOR TO SURGERY** |
| Glucocorticoid non-users,N = 1656 | 1 (Ref.) | 1 (Ref.) | 1 (Ref.) | 1 (Ref.) |
| Glucocorticoid users,N = 290 | 1.80 (0.85-3.81) | 1.83 (0.86-3.86) | 1.72 (0.80-3.73) | 1.61 (0.70-3.71) |
| + : further adjusted for in multivariable analysis. **\*** 32 treated with glucocorticoid but no info on dose.\*\* 687 missing data on DAS28 in year preceding surgery.§ ≤ 90 days prior to surgeryAbbreviations: bDMARD, biological disease modifying anti-rheumatic drug; DAS28, disease activity score using 28 joint-count. |

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| **Supplementary Table 10. Adjusted multivariable survival models on the risk of prosthetic joint infection (PJI) and mortality in rheumatoid arthritis (RA) compared with osteoarthritis (OA) patients following total hip arthroplasty (THA) or total knee arthroplasty (TKA) further adjusted for procedure type and choice of cement.**  |
|  | **Mortality** | **PJI** |
| **Adjusted for procedure** | **Adjusted for cement use** | **Adjusted for procedure and cement type** | **Adjusted for procedure** | **Adjusted for cement use** | **Adjusted for procedure and cement type** |
| **RA vs OA** |  | 1.34 (1.08-1.66) | 1.27 (1.02-1.58) | 1.34 (1.08-1.67) | 1.39 (1.08-1.78) | 1.44 (1.11-1.86) | 1.35 (1.04-1.74) |
| **TKA vs THA** |  | 0.67 (0.61-0.73) | - | 0.65 (0.59-0.72) | 1.88 (1.68-2.10) | - | 1.84 (1.63-2.08) |
| **Cement without antibiotics vs Cement with antibiotics** | - | 0.94 (0.70-1.27) | 0.89 (0.66-1.20) | - | 0.73 (41 1.3621 0.4280 1.2592 | 0.81 (0.47-1.39) |
| **Uncemented vs Cement with antibiotics** | - | 1.02 (0.92-1.13) | 0.88 (0.79-0.99) | - | 0.70 (0.62-0.80) | 0.92 (0.79-1.06) |
| **Age at surgery** | 1.08 (1.07-1.08) | 1.08 (1.07-1.08) | 1.07 (1.07-1.08) | 1.01 (1.00-1.01) | 1.00 (1.00-1.01) | 1.01 (1.00-1.01) |
| **Female vs male** | 0.57 (0.52-0.62) | 0.55 (0.51-0.60) | 0.56 (0.51-0.61) | 0.67 (0.60-0.75) | 0.69 (0.61-0.77) | 0.67 (0.60-0.75) |
| **Calendar year of surgery** | **2000-02** | 1 (Ref.) | 1 (Ref.) | 1 (Ref.) | 1 (Ref.) | 1 (Ref.) | 1 (Ref.) |
| **2003-05** | 0.84 (0.74-0.96) | 0.82 (0.72-0.94) | 0.83 (0.73-0.95) | 1.04 (0.86-1.27) | 1.08 (0.88-1.31) | 1.04 (0.85-1.27) |
| **2006-08** | 0.78 (0.69-0.89) | 0.75 (0.66-0.86) | 0.80 (0.70-0.91) | 1.07 (0.89-1.29) | 1.18 (0.97-1.42) | 1.06 (0.88-1.28) |
| **2009-11** | 0.67 (0.59-0.76) | 0.65 (0.56-0.74) | 0.69 (0.61-0.80) | 0.92 (0.76-1.10) | 1.06 (0.88-1.28) | 0.93 (0.77-1.13) |
| **2012-14** | 0.48 (0.41-0.55) | 0.45 (0.39-0.53) | 0.51 (0.43-0.60) | 0.91 (0.75-1.10) | 1.17 (0.95-1.43) | 0.95 (0.77-1.17) |
| **Duration of surgery in hours** | 1.29 (1.19-1.40) | 1.27 (1.17-1.39) | 1.27 (1.16-1.39) | 1.16 (1.02-1.32) | 1.18 (1.04-1.34) | 1.16 (1.02-1.32) |
| **Previously hospitalised due to infection**  | 2.01 (1.82-2.22) | 2.01 (1.82-2.22) | 2.04 (1.84-2.25) | 1.91 (1.67-2.18) | 1.92 (1.67-2.20) | 1.88 (1.64-2.15) |
| **Ischaemic heart disease** | 1.59 (1.38-1.84) | 1.61 (1.40-1.86) | 1.59 (1.38-1.84) | 1.21 (0.96-1.54) | 1.22 (0.96-1.55) | 1.23 (0.97-1.56) |
| **COPD** |  | 1.98 (1.73-2.25) | 2.02 (1.77-2.30) | 1.99 (1.74-2.27) | 1.45 (1.18-1.78) | 1.43 (1.16-1.76) | 1.46 (1.19-1.80) |
| **Diabetes Mellitus** | 1.97 (1.73-2.24) | 1.91 (1.67-2.17) | 1.96 (1.72-2.23) | 1.29 (1.06-1.56) | 1.35 (1.12-1.64) | 1.29 (1.06-1.56) |
| Abbreviations: COPD, Chronic Obstructive Pulmonary Disease |