

Supplementary file 1 (S1)

Societal value

Health and demographic information on all citizens is updated annually in a series of national registries, with a very high degree of completeness [1]. Linkage of data from these registries is possible using the 10-digit personal identification number automatically assigned to all Danish citizens [2].

The Danish healthcare system is tax funded and offers universal access. Data on healthcare contacts at inpatient and non-primary outpatient facilities are registered in the Danish Patient Registry (DPR), including date of contact and diagnoses given by the treating physician according to the Danish version of the International Statistical Classification of Diseases (ICD-10 starting 1993) [3]. Reporting of data on each single healthcare contact, excluding primary care visits, is required by the state.

Using data from the DPR, we will identify a national population-based cohort of inflammatory arthritis patients, including those patients who had attended an outpatient clinic during the time period 1 June 2018 through 31 December 2023.

For each patient with inflammatory arthritis, two general population comparator (GPC) subjects, alive, without inflammatory arthritis, and matched on year of birth, gender, time, and marital status will be identified.

Most patients with inflammatory arthritis are diagnosed by rheumatologists at public outpatient and inpatient facilities.

Information on socioeconomic status will be obtained from nationwide registries on employment, educational level, income, and pensions. Cost of hospital contacts including costs of hospitalisation weighted by use for separate diagnosis-related groups (DRG tariffs) and cost of specific outpatient treatments (DAGS tariffs) based on data from the Danish Ministry of Health. The cost of medicine will be derived from the Danish Drug Prescription Registry and consisted of the retail price of each drug multiplied by prescribed quantity. Information on health costs associated with consultation and treatment in the primary sector will be collected from the National Health Insurance Service Registry.

The Civil Registration System (CRS): Since 1968 the CRS has registered deaths and migrations among all Danish citizens.

The inflammatory arthritis population will be drawn at the first contact in the DPR after 2018, and the index date will be designated as the baseline date. For inpatients, the index date will be defined as the date of the first discharge from hospital after June 2018. For outpatients, the index date will be defined as the date of the first hospital contact with inflammatory arthritis. In our cost analysis, subjects will have to be eligible for 12 months after the index date; thus, an index date cannot be no later than 31 December 2022. Consequently, patients with an index date in year 2023 will be excluded from our analyses. Healthcare and public transfer (allowance) costs, employment status, and personal income 5 years before and 10 years after the index date of inflammatory arthritis patients will be compared to a general population comparator (GPC). Moreover, the burden of various comorbidities will be studied three years prior to and three years after the index day of the inflammatory arthritis patients. Patients and/or comparators who are registered

as diseased will be included in the analyses up until the year after their registered date of death. As such, patients/comparators have to be eligible and alive at the beginning of the period but not necessarily alive the whole period.

Employment status will be categorised as regular job/self-employment, unemployment, disability pension, early retirement, age pension retirement, retired on other pensions, or not in labour. Average income per inflammatory arthritis patient and comparators will be differentiated into income deriving from employment, social security and unemployment benefit, sick pay, disability pension, early retirement, age pension, other public transfer, other pensions, and total income. Very large incomes will not be considered valid; income over 270.000 €/year will be set to missing. Yearly healthcare costs for study participants will be calculated using information on frequency and cost of hospital contacts (in and outpatient treatments), consultations with general practitioners and other specialists, and use and cost of medicine.

References

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