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EQ-5D scores in patients with Clinically Suspect Arthralgia (CSA): a time-to-diagnosis analysis

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Background

Patients with clinically suspect arthralgia (CSA) are at risk of developing rheumatoid arthritis (RA). A proportion of them may benefit from treatment, which could delay the onset of RA and/or reduce disease activity. Postponing the progression to RA could potentially lead to better quality of life (QoL) during this period.

Aim

1. We estimate the **association of generic health-related quality of life** (EQ-5D-5L index score) in CSA patients **with time-to-diagnosis of RA.**
2. To estimate **the course of EQ-5D-5L index scores** in CSA patients who do **not develop RA**

Method



RA



CSA



No RA

Progressors: Linear mixed model to investigate the association between EQ-5D-5L index score and time-to-diagnosis, assuming a parabolic relationship*.

$$U_{ij} = \beta_1 Days\ to\ develop\ _j + \beta_2 Days\ to\ develop_j^2 + \omega_i + \epsilon_{ij}$$

Three cohorts: 1) Leiden CSA cohort (EQ-5D-5L)[1], 2) CSA cohort (EQ-5D-5L)[2], and SONAR cohort (EQ-5D-3L)[3]

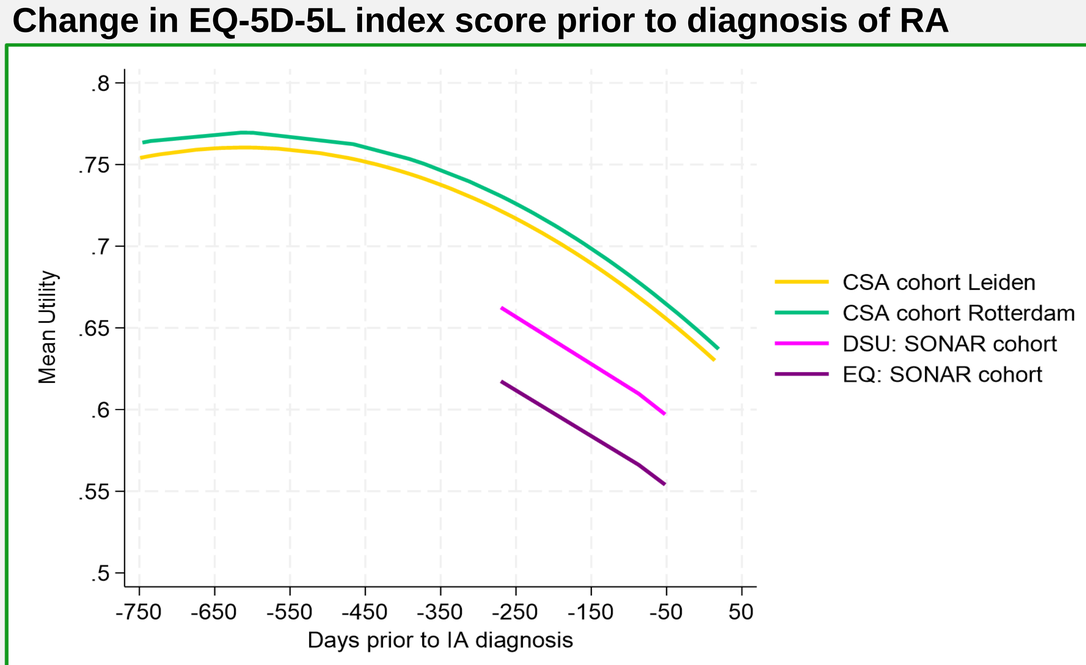
Two mapping methods (EQ-5D-3L to EQ-5D-5L) from: 1) Decision Support Unit (DSU) of the national institute for health and care excellence (NICE) [4], 2) EuroQoL Group [5]

Non-progressors: Linear mixed model to investigate the EQ-5D-5L index score at different timepoints (baseline, 4 or 6, 12, and 24 months). Baseline =day of enrollment into the CSA cohort

$$U_{ij} = \beta_1 Visit\ month_j + \omega_i + \epsilon_{ij}$$

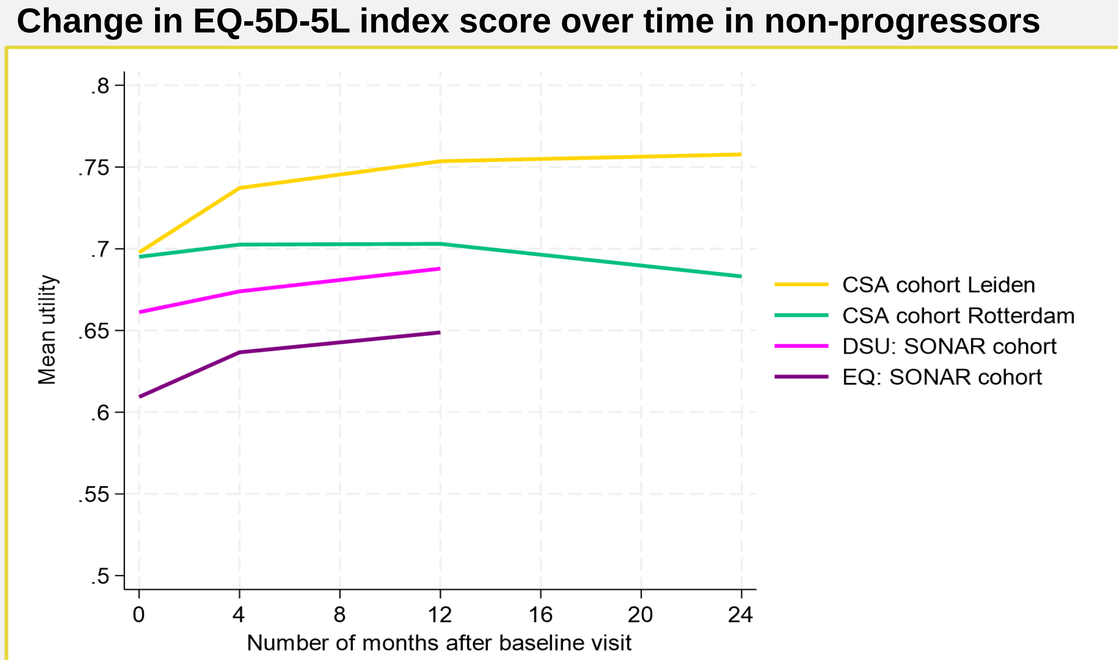
Results

Change in EQ-5D-5L index score prior to diagnosis of RA



- In all cohorts **the QoL deteriorates** over time **with a similar slope**.
- The **EuroQoL mapping method** results in **lower QoL estimates**.
- **QoL** in the SONAR cohort is **worse** compared to the other cohorts.

Change in EQ-5D-5L index score over time in non-progressors



- Estimated **QoL remains relatively stable over time**.
- CSA patients from the Rotterdam cohort may include patient who develop RA in a later stage.

Conclusion

In all cohorts, EQ-5D-5L index scores of patients **who progress** to RA **deteriorate** prior to RA diagnosis.

Although the two mapping methods **do not result in the same EQ-5D-5L index scores,** the pattern of **change over time is the same**.

EQ-5D-5L index scores of patients **who do not progress** to RA remain **stable over time**.

Further research

- These inputs will be used in a **cost-utility model** that compares different **diagnostic test-treatment strategies for CSA with Standard of Care**.
- To which extent is the **difference** between the SONAR cohort and the other two cohorts **caused by mapping?**

References & abstract

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Making Minds Matter

**In which ω_i = the random variation between individual observations, and ϵ_{ij} = the random variation between the predicted outcome and the observed outcome for each specific observation.*

Classification: Internal