

Long-term Outcome in Levothyroxine Treated Individuals with Subclinical Hypothyroidism and concomitant Heart Disease

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The authors have no conflicts of interest to declare

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BACKGROUND

Subclinical Hypothyroidism (SCH) is a common condition which can lead to impaired systolic and diastolic dysfunction. However, controversy remains over the potential benefits of levothyroxine treatment in patients with SCH and concomitant heart disease.

AIM

Examine the effects of levothyroxine treatment on all-cause mortality in patients with subclinical hypothyroidism and heart disease.

METHODS

In the present **cohort study** primary care patients aged 18 years and older with established heart disease (*ischemic heart disease, heart failure or cardiac arrhythmia*) who underwent **thyroid function tests** in 2000 – 2009 were enrolled upon diagnosis of SCH. Exclusion criteria included a history of thyroid dysfunction, thyroid-related medication or medication affecting thyroid function.

Patients were stratified according to cashed prescriptions of levothyroxine during a run-in period of 6 months. Risk of all-cause mortality was estimated as incidence rate ratio (IRR) by use of time-dependent **Poisson regression models** adjusted for age, gender and comorbidity, with patients not receiving levothyroxine as reference.

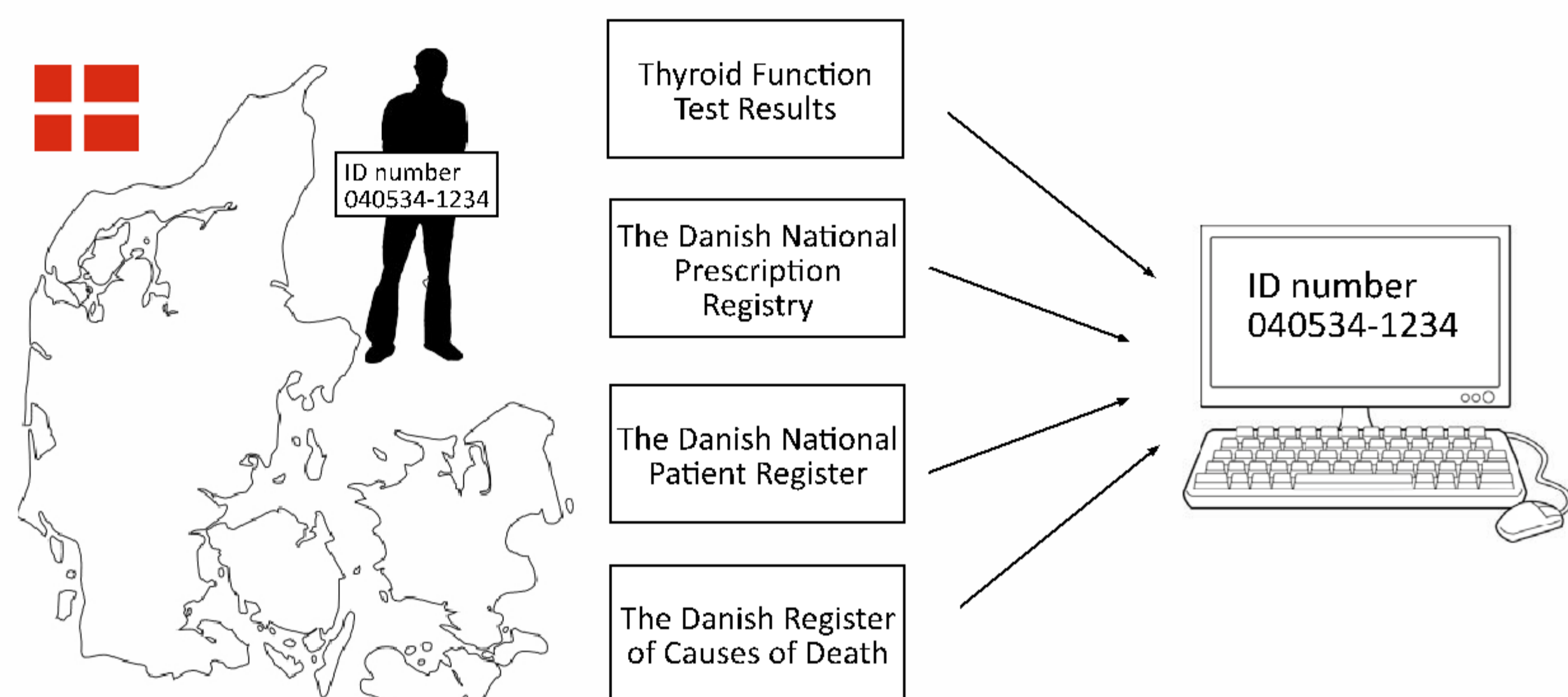


Figure 1: Nationwide registers

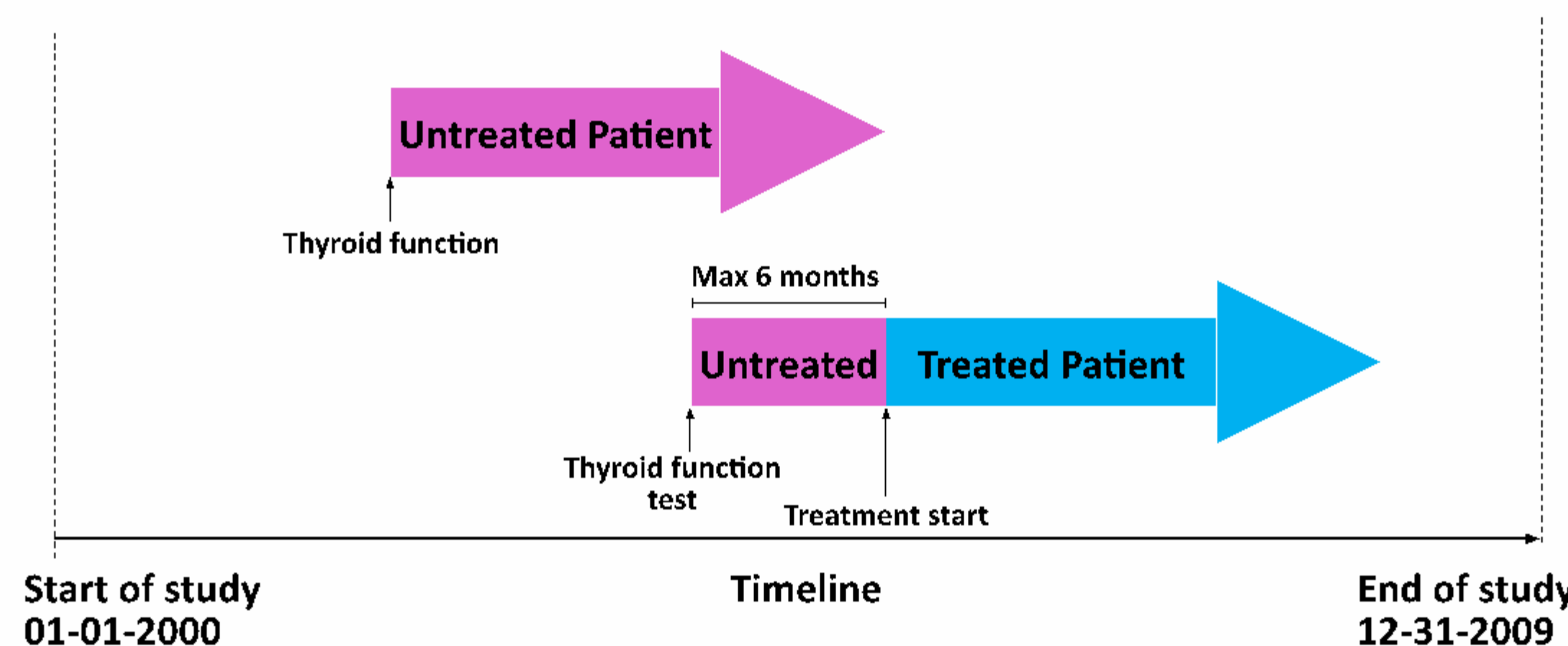


Figure 2: Study design

RESULTS

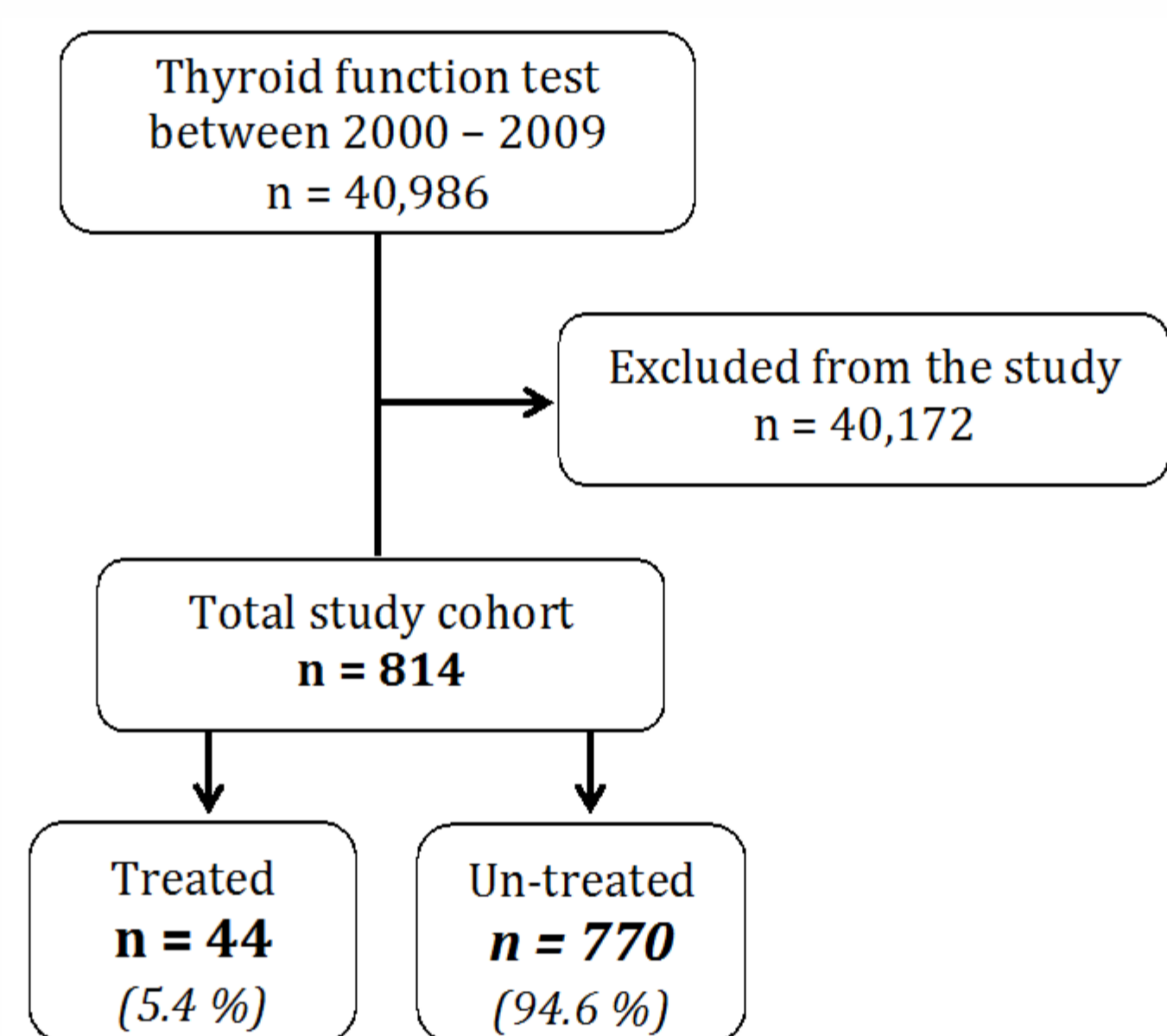
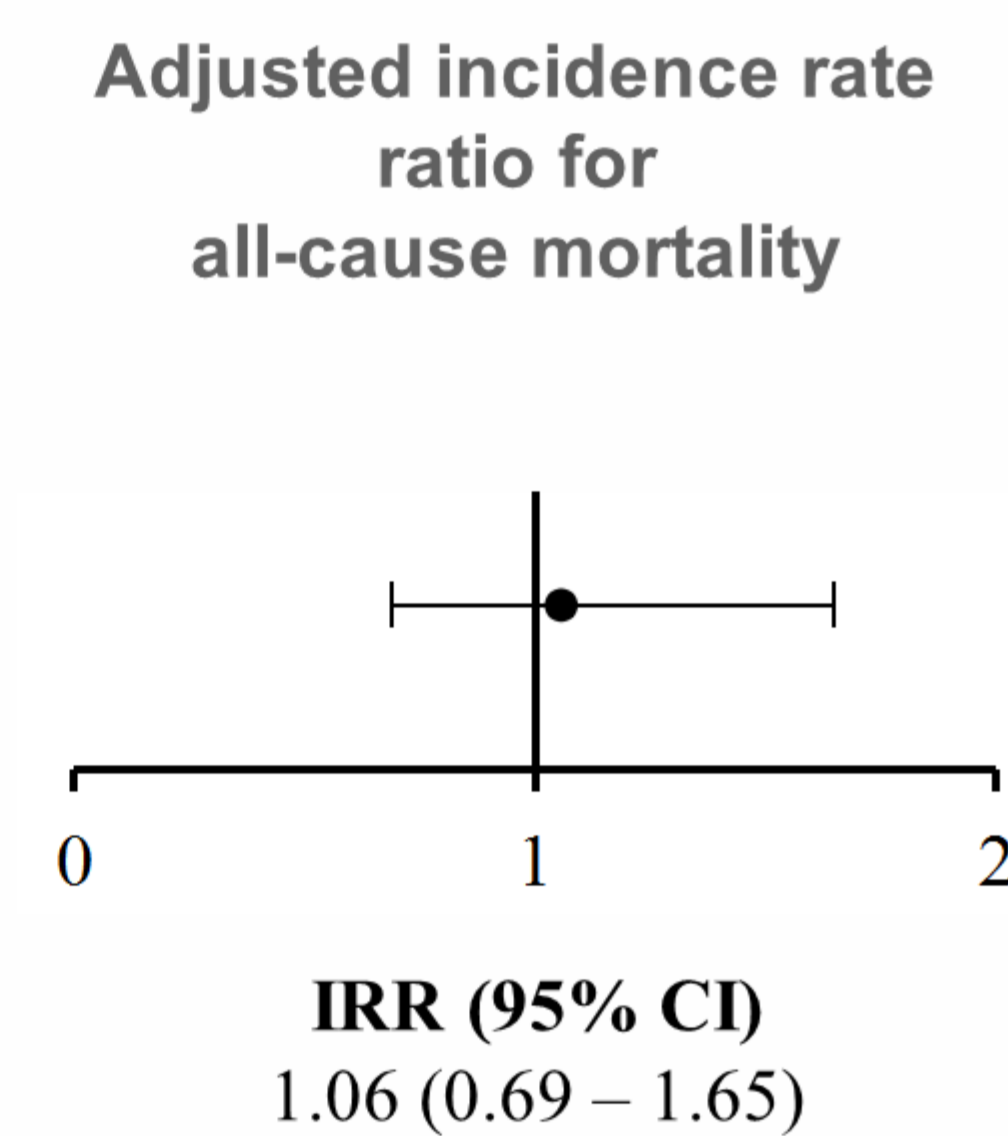
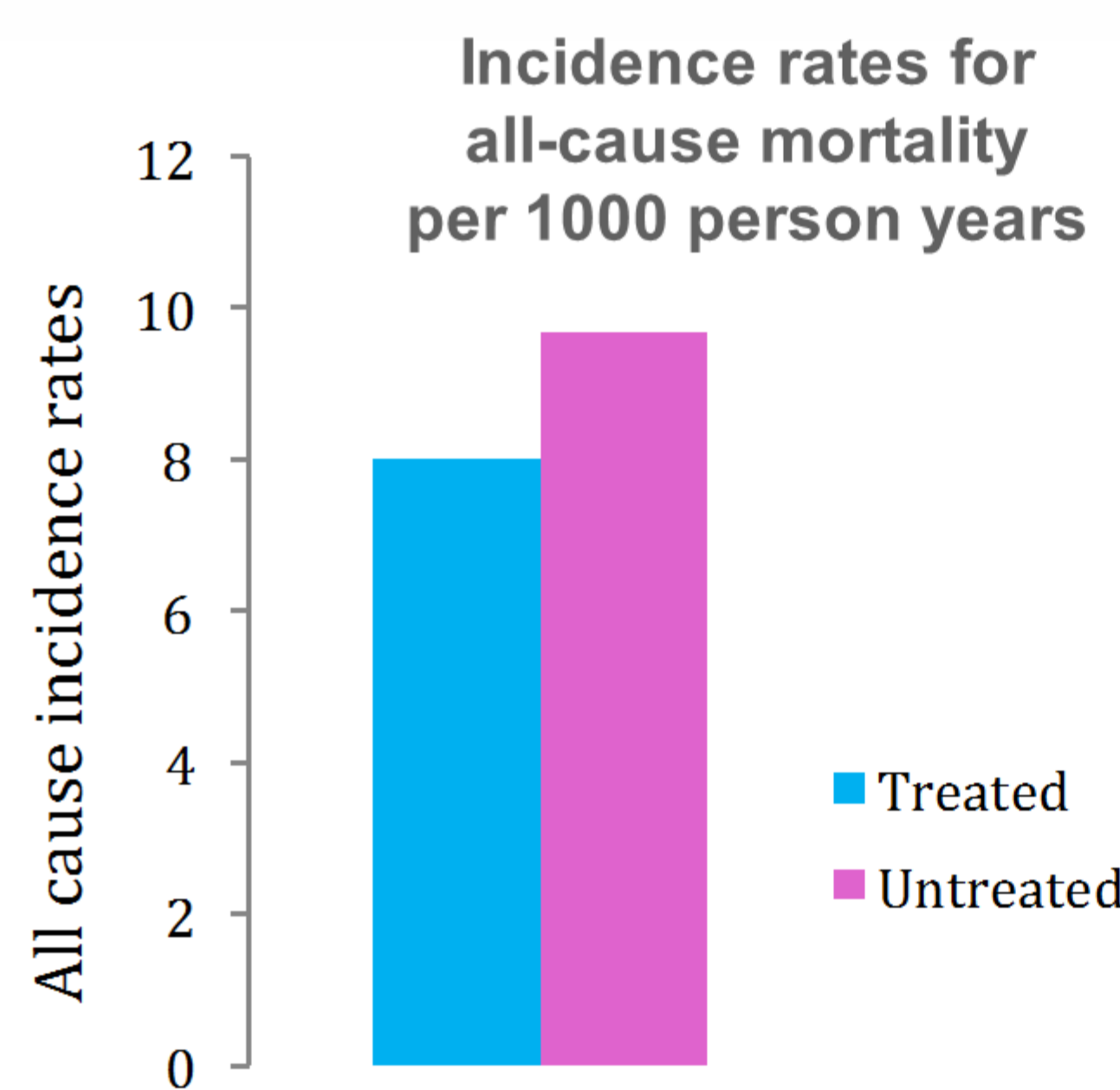


Figure 3: Defining the study population

Follow-up:
During a median follow-up time of **5.1 years** (IQR: 8.7 – 2.8), 442 patients died (54.3%).

Baseline characteristics:

- Mean age: 74.1 years (SD ± 13.5)
- 65% were women
- No major distinctions in health



No significantly increased risk of all-cause mortality was found in patients treated with levothyroxine (IRR 1.06 [95% CI: 0.69-1.65]).

CONCLUSION

Levothyroxine treatment in patients with subclinical hypothyroidism and concomitant heart disease is not associated with a significant change in the risk of all-cause mortality in a real-world cohort study.

