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## BACKGROUND & AIM

Hypertension (HTN) is highly prevalent in newly diagnosed CLL and a common adverse event in patients treated with BTK inhibitors.

Our aim was to assess the impact of HTN on treatment and survival outcomes for patients with CLL.

## METHODS

We used data from nation-wide registers. Data was linked on an individual level.

- **CLL cohort:** The Danish CLL Register, patients diagnosed from 2008 to 2022. Last follow-up: Sep. 2022.
- **Causes of death:** The Danish National Register of Causes of Death.
- **HTN diagnosis (Table 1):**
  - The Danish National Patient Register and Epic
  - The Danish Prescription Register

Stratification: HTN-status prior to CLL diagnosis.

TABLE 1 – HTN definition

Two prescriptions on first choice anti-HTN or combination anti-HTN therapy, one prescribed <180 days prior to CLL diagnosis
Two prescriptions on anti-HTN of later choice, both prescribed <180 days prior to CLL diagnosis
Two ICD10 codes for HTN prior to CLL diagnosis

### Primary outcome:

- **Overall survival (OS)** from time of CLL diagnosis and first line treatment comparing CLL patients w/ and w/o HTN.
  - Kaplan-Meier and Cox regression model.

### Secondary outcomes:

- **Event-free survival (EFS)**, time to first treatment (TTFT) and cause-specific mortality.
- **Cumulative incidence and Cox regression model.**

## RESULTS

- **Patient cohort: 6,557 patients, 46% of whom had HTN**
- **Median age: 71 years (74 vs 86 years for patients w/ and w/o HTN, respectively)**
- **CLL patients with HTN had a shorter overall survival (OS), particularly following first line treatment (Figure 1 and 2).**
- **Patients >75y had similar 5-year OS rates w/ and w/o HTN (52% vs 54%, respectively)**
- **For CLL patients, HTN was associated with a higher risk of CLL-unrelated and CLL-related death, and they more often died from infectious and cardiovascular causes (Figure 4).**

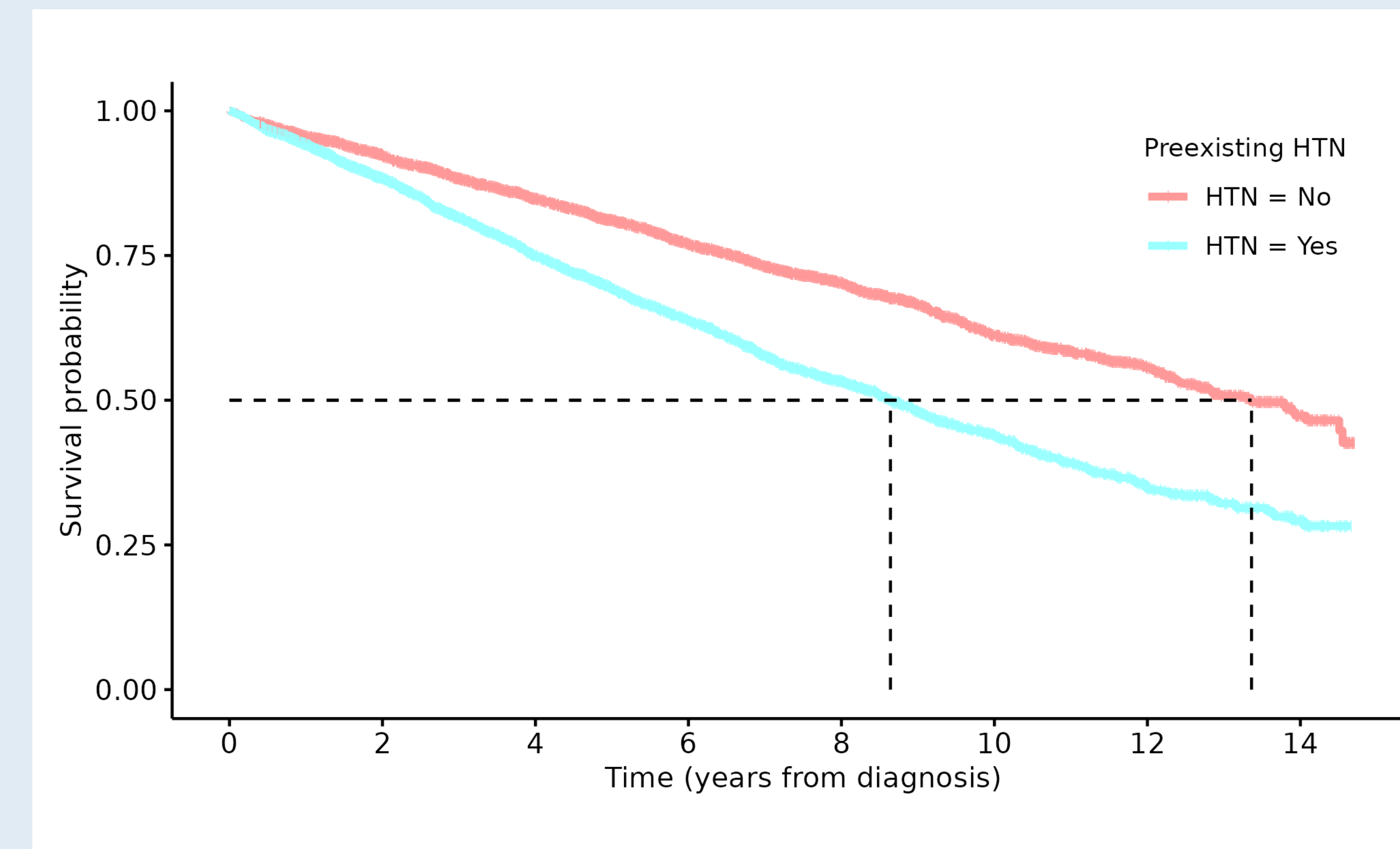


Figure 1: Kaplan-Meier curve showing OS following CLL diagnosis for CLL patients w and w/o HTN

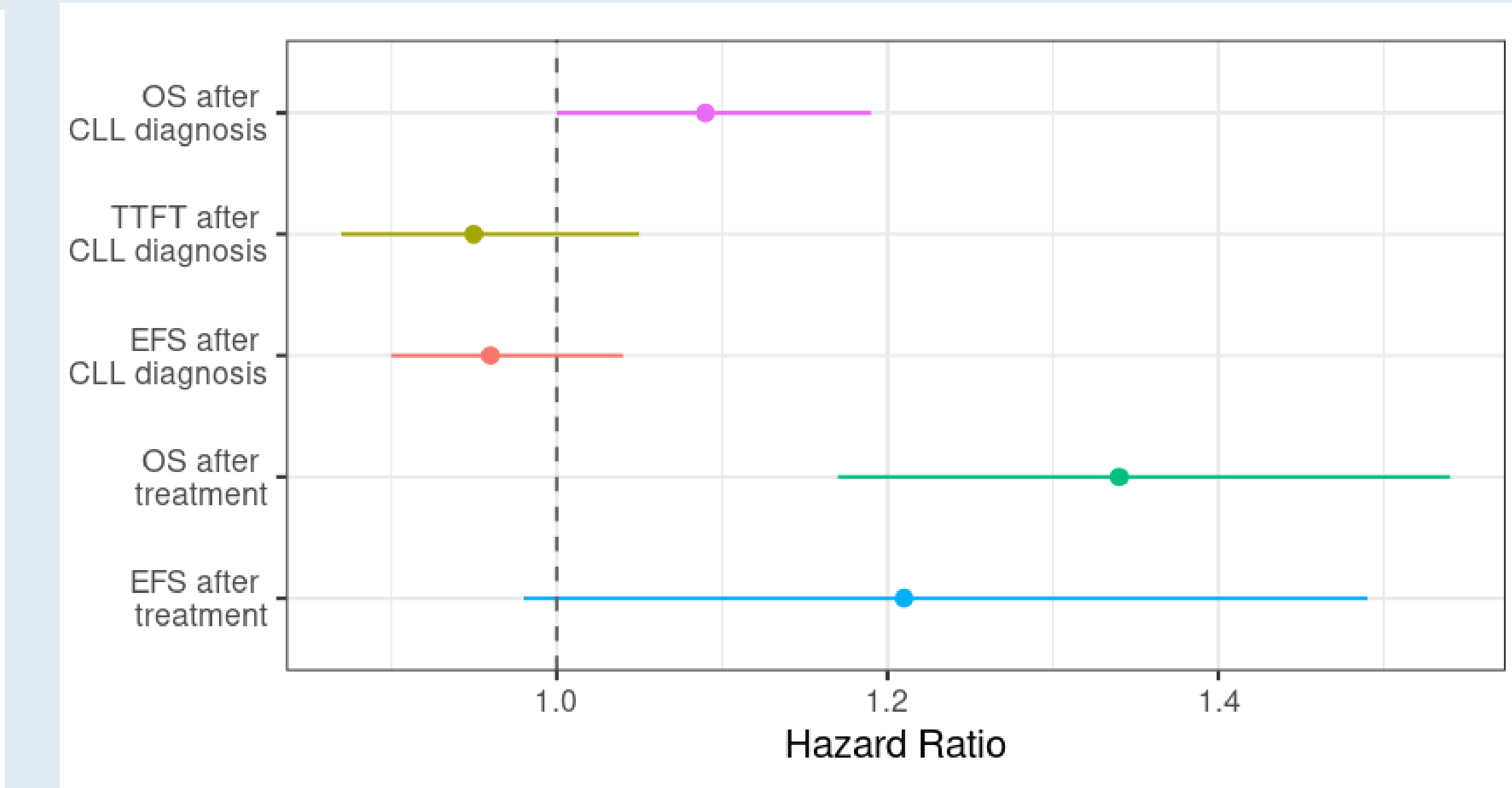


Figure 2: Forest plot presenting Cox model hazard ratio (HR) and 95% confidence interval (CI) for OS, TTFT and EFS from CLL diagnosis and OS and EFS from first line CLL treatment comparing CLL patients w and w/o HTN (as reference). Adjusted for age at CLL diagnosis, year of CLL diagnosis, sex, CLL-IPi and numbers of comorbidities, including cardiac.

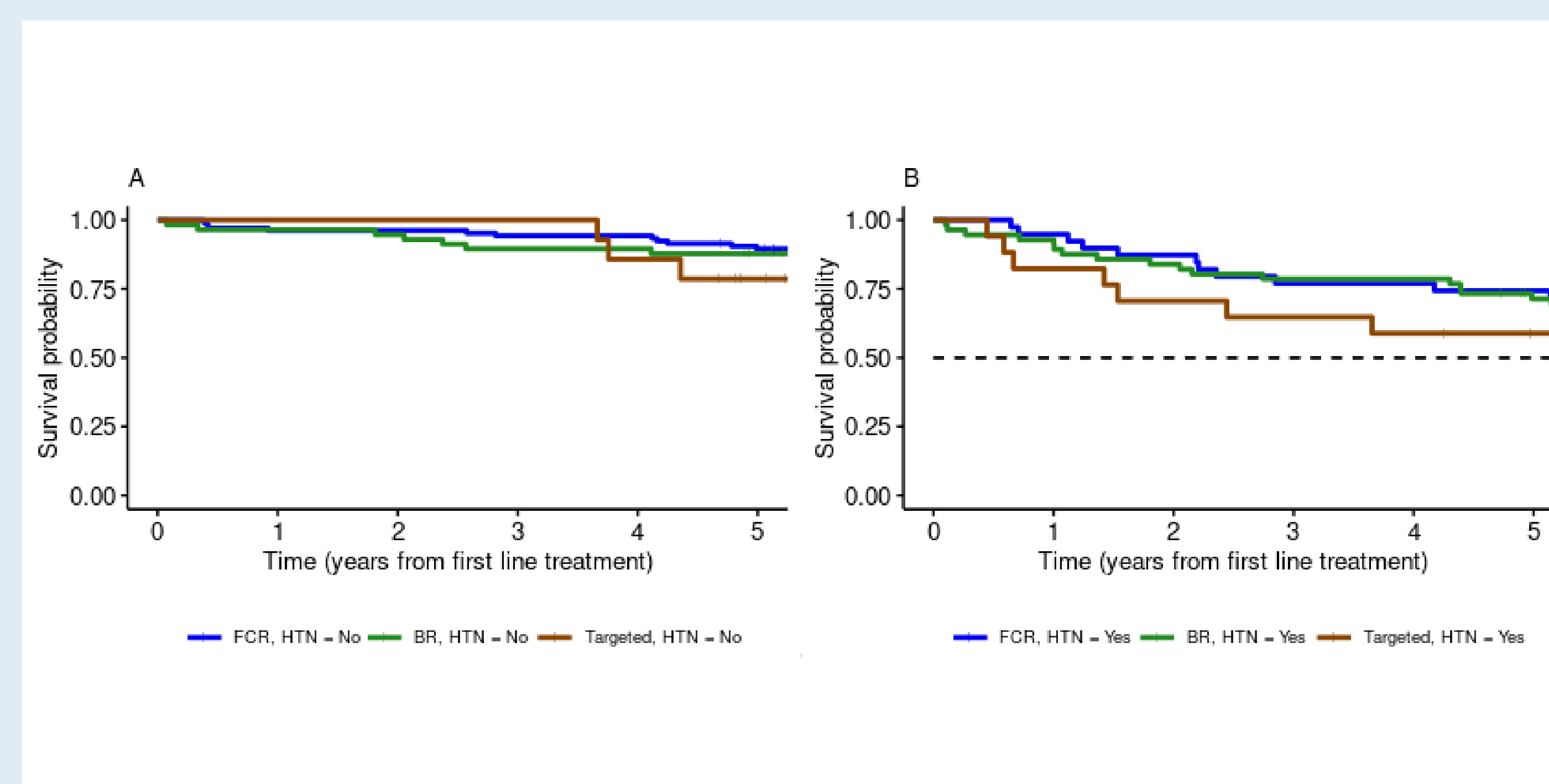


Figure 3: OS from first line treatment with either FCR, BR or targeted drugs. stratified by treatment type for A: CLL patients w/ HTN and B: w/o HTN at time of treatment. Performed on 288 patients who underwent medical journal review .

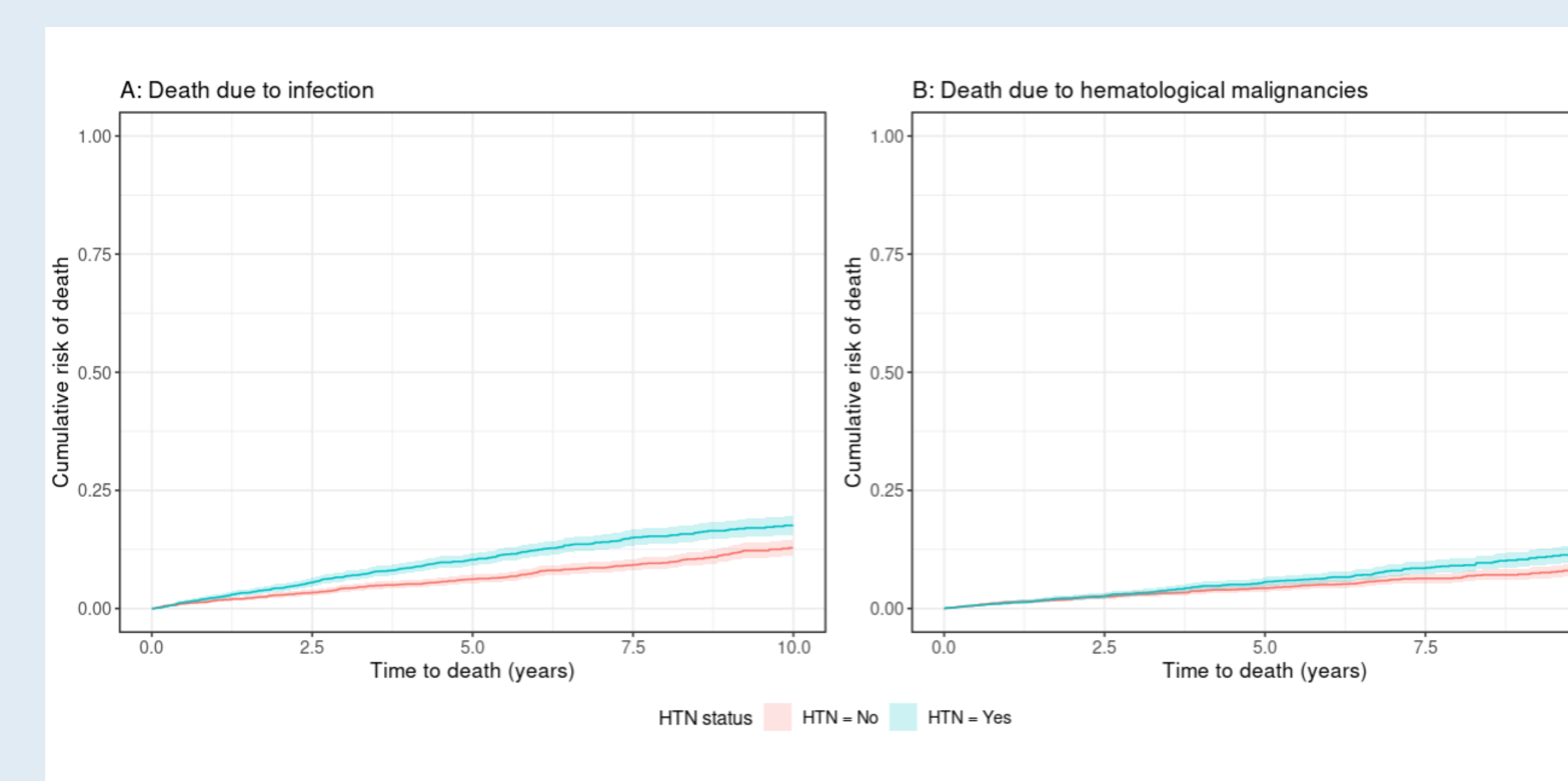


Figure 4: Cumulative incidence curves showing risk of death due to A: infection (HR: 1.16 [95% CI 0.98;1.37] and B: hematological malignancies (HR: 1.06 [95% CI 1.86;1.31] stratified by HTN status at CLL diagnosis. Death due to other causes was treated as competing risk. Cox model adjusted for age, year of CLL diagnosis and sex.

## TAKE HOME MESSAGE

- **HTN was associated with shorter survival following both CLL diagnosis and treatment and a longer time to treatment.**
- **CLL patients with HTN may be more vulnerable to infections, which could be considered upon choice of CLL treatment.**
- **CLL patients with HTN also benefitted from chemoimmunotherapy compared to targeted treatment.**