

Comorbid chronic diseases and survival in compensated and decompensated cirrhosis: a population-based study

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Background

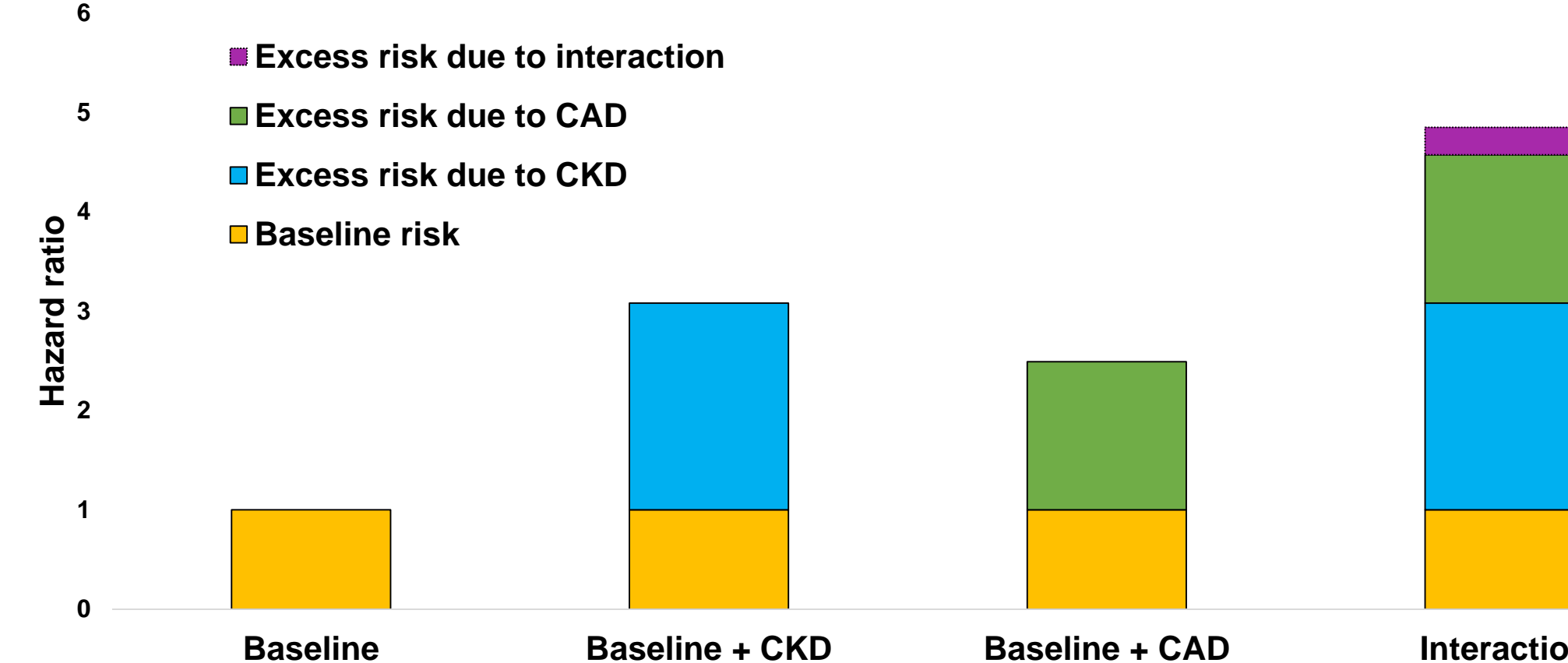
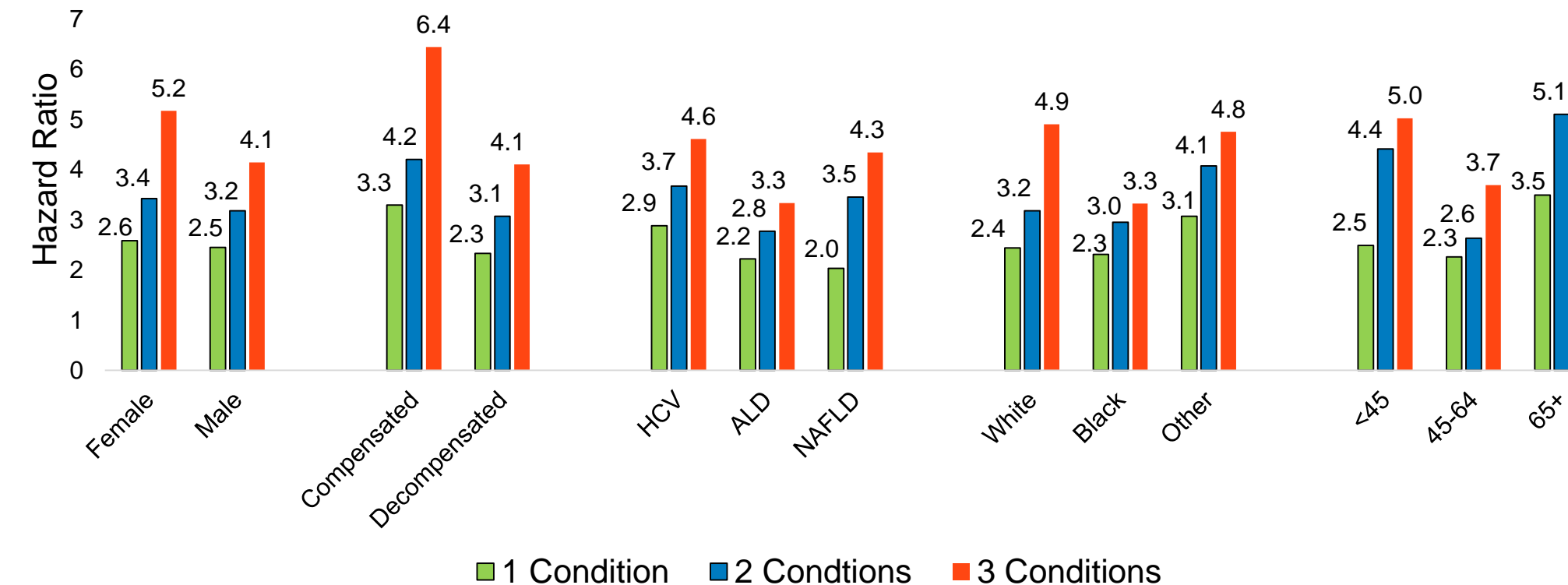
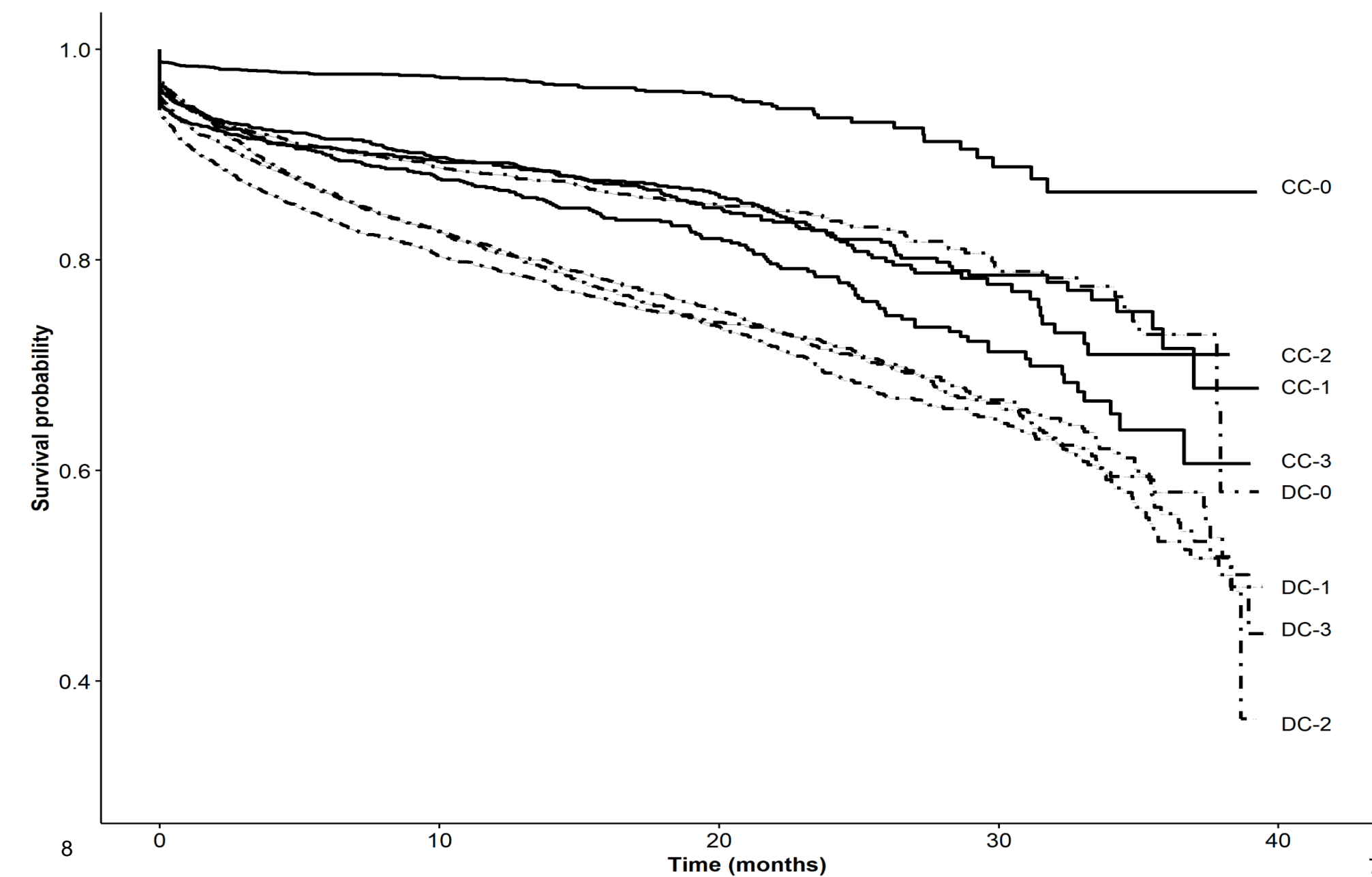
- Natural history of cirrhosis: Compensated -> Decompensated
- Risk of death
 - Decompensated cirrhosis > Compensated cirrhosis > General population
- Cirrhotic patients are getting **older** and have **multiple chronic diseases**
- It is unclear whether **mortality** among patients with **cirrhosis** is solely the function of **liver disease progression**
- The impact of **comorbid chronic diseases** on the natural course of compensated and decompensated **cirrhosis** and **mortality** is not clear

Study Purpose

- To examine the singular and additive impact of **comorbid chronic diseases** on **mortality** in patients with **cirrhosis** in a large and diverse Metroplex in the United States.

Methods

- A Population-based cohort
- Dallas-Fort Worth-Arlington Metroplex; one of the largest and diverse metroplexes in the US.
- Included all adult patients diagnosed with **cirrhosis** between **2000-2018**, using longitudinal hospitalization data
- The primary outcome was **mortality**.
- The primary exposure variable of interest was presence of **comorbid chronic diseases**.
- Cox** proportional hazards modeling was employed to assess the impact of comorbid chronic diseases (**diabetes mellitus, chronic kidney disease and cardiovascular disease**) on **mortality** in patients with cirrhosis.



Results

- There were **35,361** patients with **cirrhosis**:
 - Mean age 59.5 years, 41.8% females, 29.7% non-White, and 17.5% Hispanic ethnicity
- Overall, **1 out of every 4 patients** with cirrhosis had a **chronic comorbidity** (DM, CVD or CKD) with a **majority having CVD** (45%).
- Presence of **comorbid chronic diseases** was 1 disease (28.9%), 2 diseases (17.5%) and 3 diseases (12.6%).
- Stepwise **decrease in survival** in the presence of increasing numbers of **chronic diseases** (CC/DC+X: Compensated/Decompensated cirrhosis + X chronic diseases)
- Survival for compensated cirrhosis with 2 chronic diseases was similar to decompensated cirrhosis (CC+2 vs. DC+0)
- Synergistic association between CVD and CKD produced an increased mortality risk

Conclusions

- Comorbid chronic diseases** impact the natural history of **cirrhosis**.
- Decompensated **cirrhosis** maintained the expected higher **mortality** trends
- However, compensated **cirrhosis** when combined with chronic cardiometabolic comorbidities demonstrated comparable **mortality** to that of decompensated **cirrhosis** alone.
- The combination of CKD and CVD appears to confer the highest **mortality** risk in patients with **cirrhosis**.