



Prognostic Significance of Left Ventricular Systolic Dysfunction at the Time of NSTEMI in Patients with No Prior History of Heart Failure



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BACKGROUND

- Heart failure (HF) is the most common serious complication of myocardial infarction (MI).
- The prognostic significance of LV systolic dysfunction (LVSD) at the time of NSTEMI is not well-described.

METHODS

- Using patient-level data from 7 clinical trials enrolling pts with NSTEMI (TACTICS-TIMI 18, PROVE IT-TIMI 22, MERLIN-TIMI 36, EARLY ACS-TIMI 39, IMPROVE IT-TIMI 40, TAO, SOLID-TIMI 52), we examined the frequency of investigator-reported LVSD (LVEF <50%) and acute HF (present/absent or Killip class ≥II) during the index hosp in pts with NSTEMI and no prior HF.
- We compared risk of subsequent hosp for heart failure (HHF) or cardiovascular (CV) death through 12 months in pts with vs. without LVSD and acute HF during the index hosp using Cox proportional hazards regression.
- HRs were adjusted for age, previous MI, T2DM, PAD, smoking status, eGFR, BMI, and heart rate.

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RESULTS

Figure 1. LV Function During Index Hospitalization.

■ LVEF <50% ■ LVEF ≥50% ■ LVEF Unknown

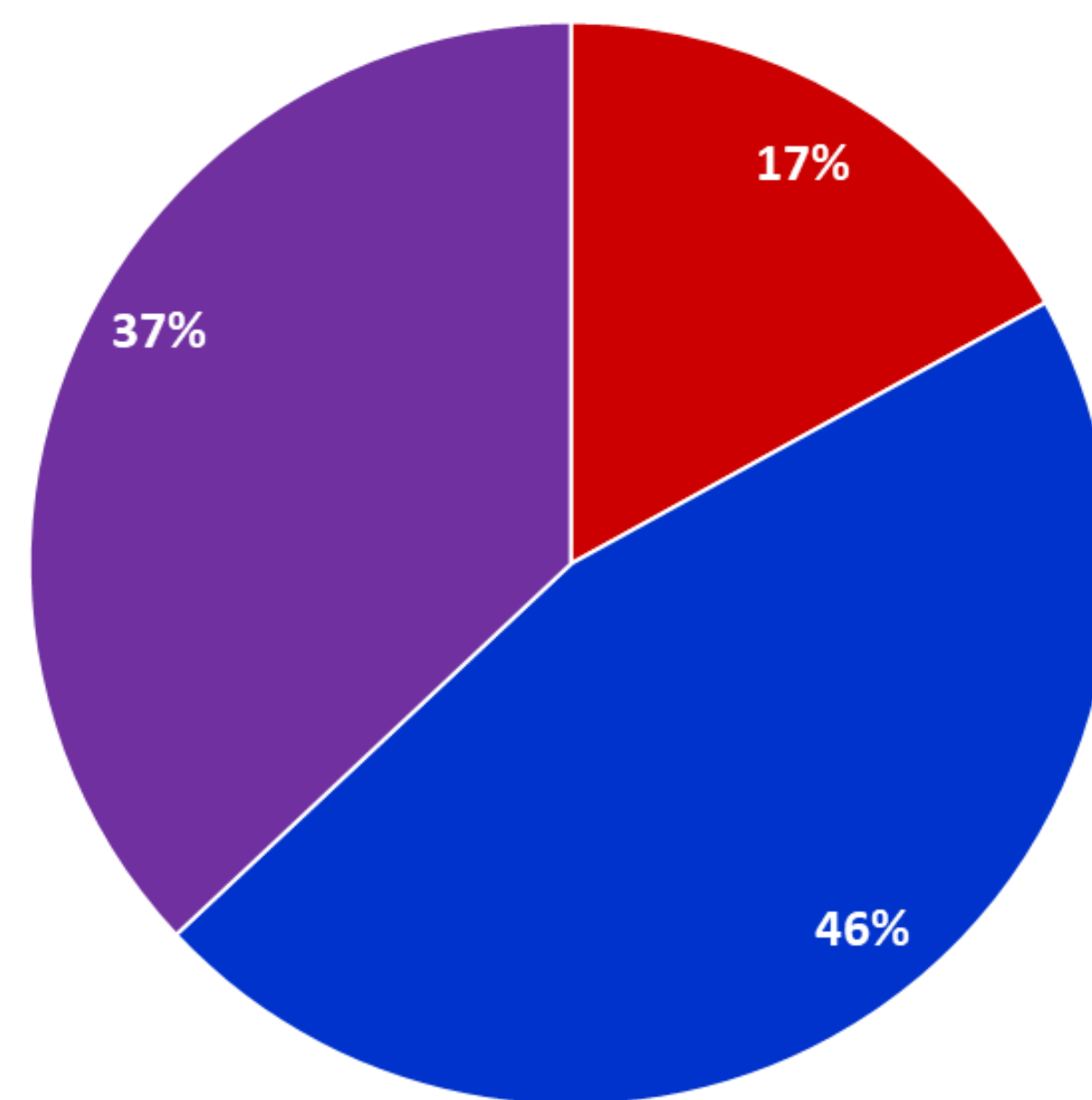
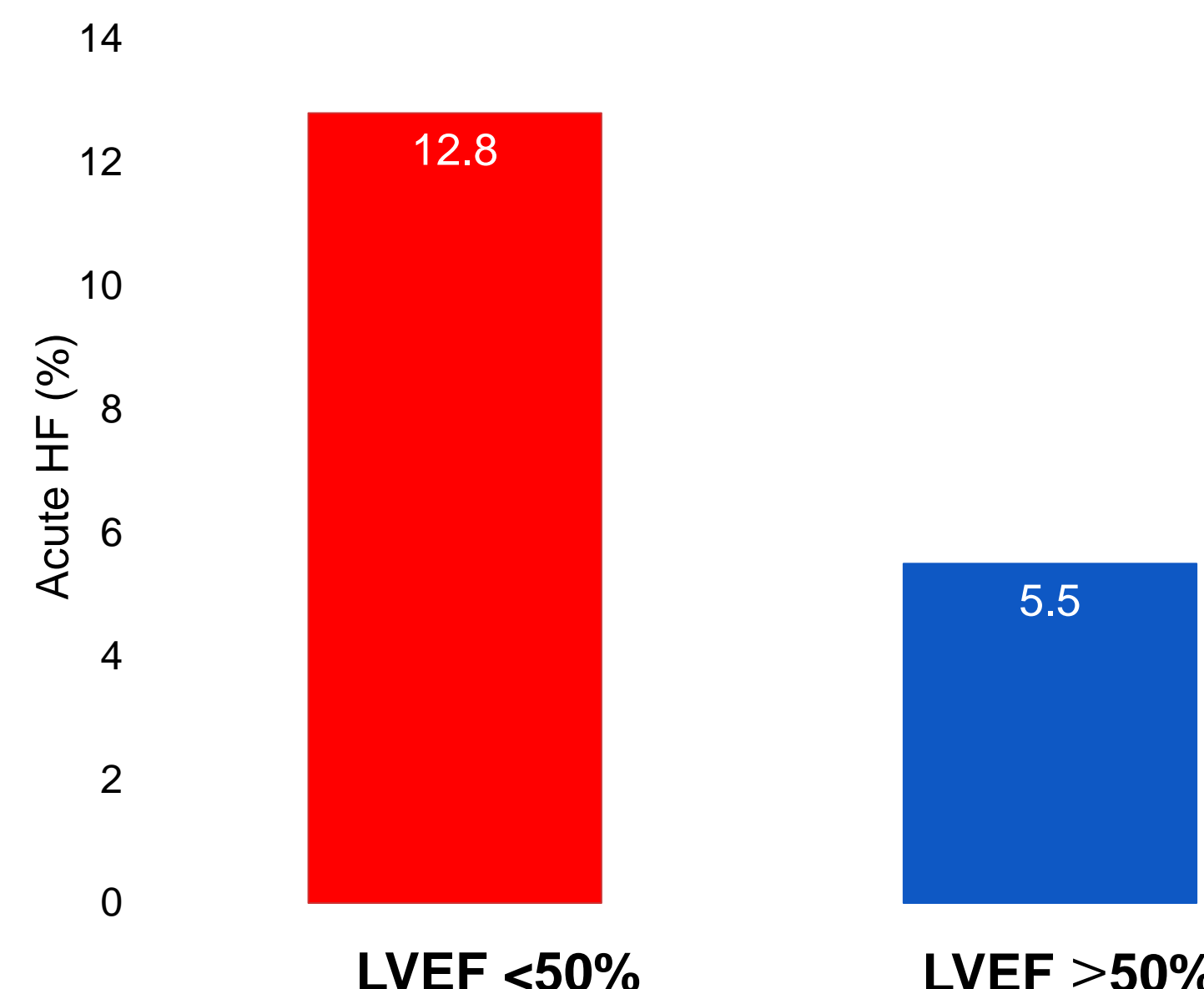


Figure 2. Proportion with Acute HF by LV Systolic Function at Time of NSTEMI.



- Among **35,826** pts with NSTEMI and no prior HF, 17% had LVSD, 46% had normal LV systolic function, and 37% had unknown LV function during index hosp (**Fig 1**); there was a >2-fold higher rate of acute HF in pts with LVSD (**Fig 2**)
- Pts noted to have LVSD during index hosp had a 2-fold increased risk of HHF or CV death (adj-HR **2.22**, 95% CI 1.95-2.54) (**Fig 3**) and the individual components (HHF: adj-HR **2.70** [2.24-3.25]; CV death: adj-HR **1.98** [1.68-2.35]).
- Pts with both LVSD and acute HF during index hosp had highest risk of HHF/CV death, followed by pts with *either* LVSD or acute HF (**Fig 4**).

Figure 3. Hosp for HF or CV Death by LVEF.

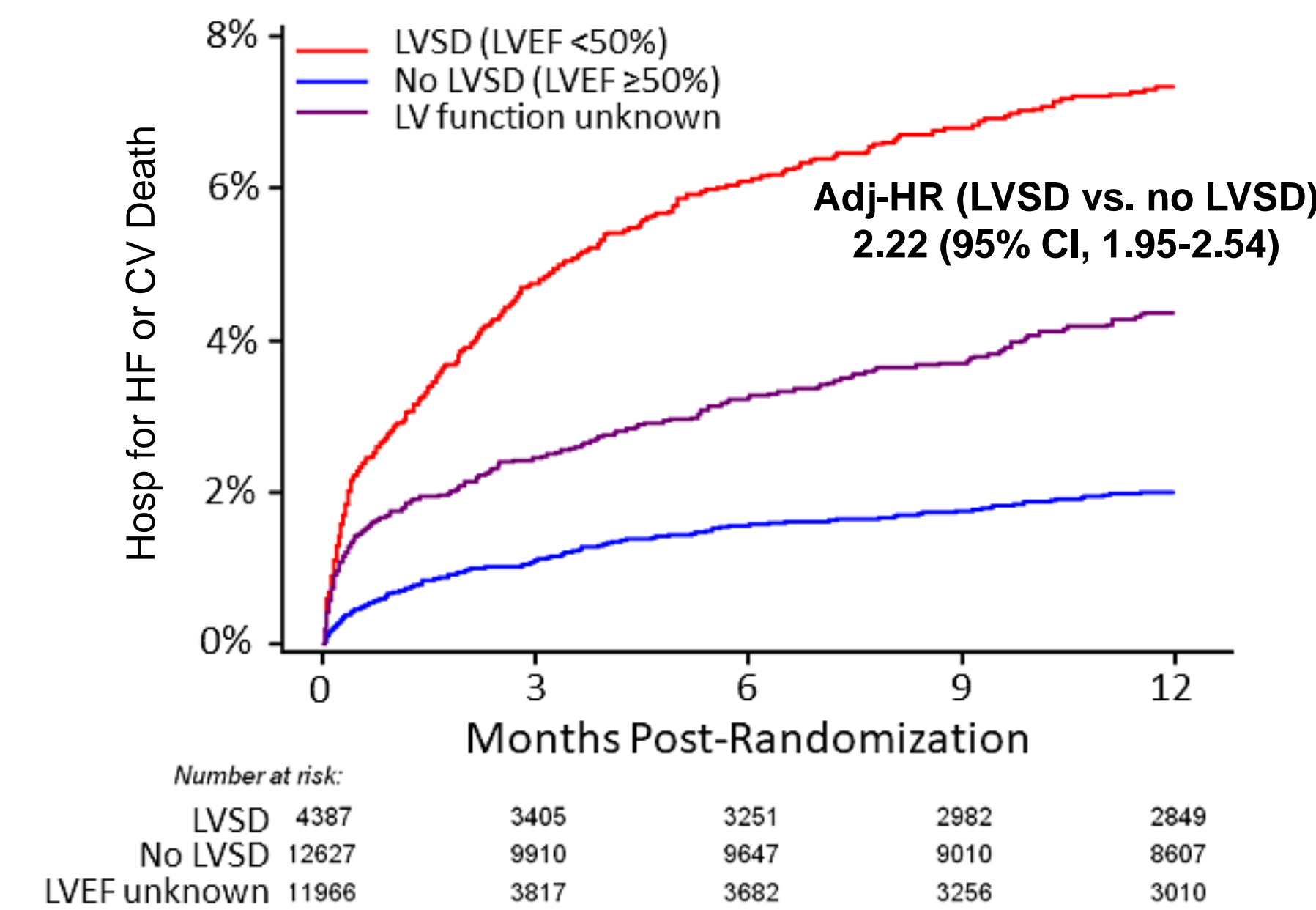
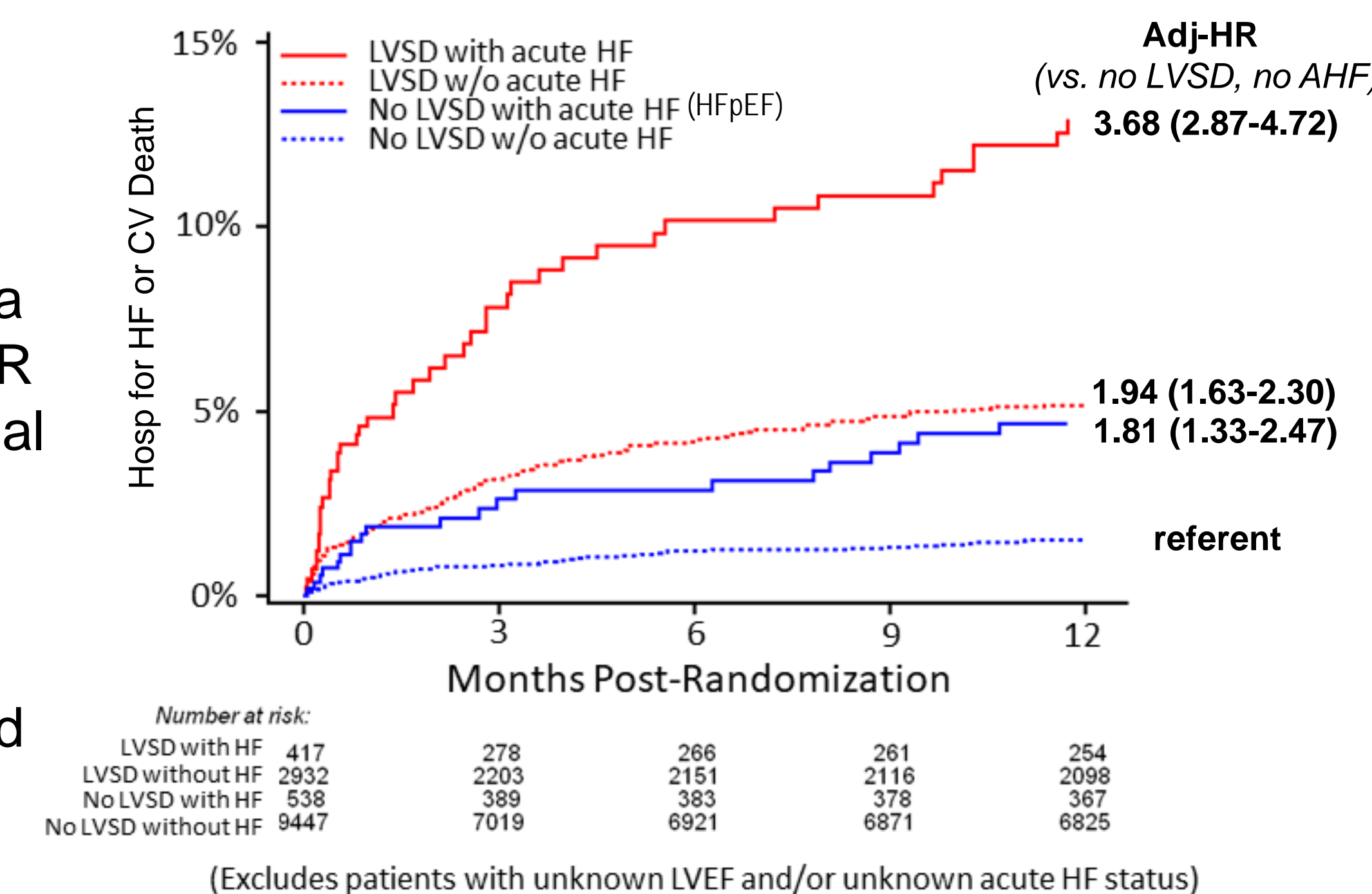


Figure 4. HHF or CV Death by LVEF and Acute HF Status.



CONCLUSIONS

- Among pts enrolled in CV clinical trials for NSTEMI with no prior HF, those found to have LVSD had a significantly increased risk of HHF and CV death.
- Pts without LVSD but with acute HF during the index hospitalization (HFpEF pts) also had significantly increased risk of HHF and CV death.
- Patients with both LVSD and acute HF during the index hospitalization had the highest risk.