

34. Effect of Renin-Angiotensin System Blockers and Beta-Blockers on Mortality in Patients With Acute Heart Failure Syndrome, on Behalf of KorAHF Investigators

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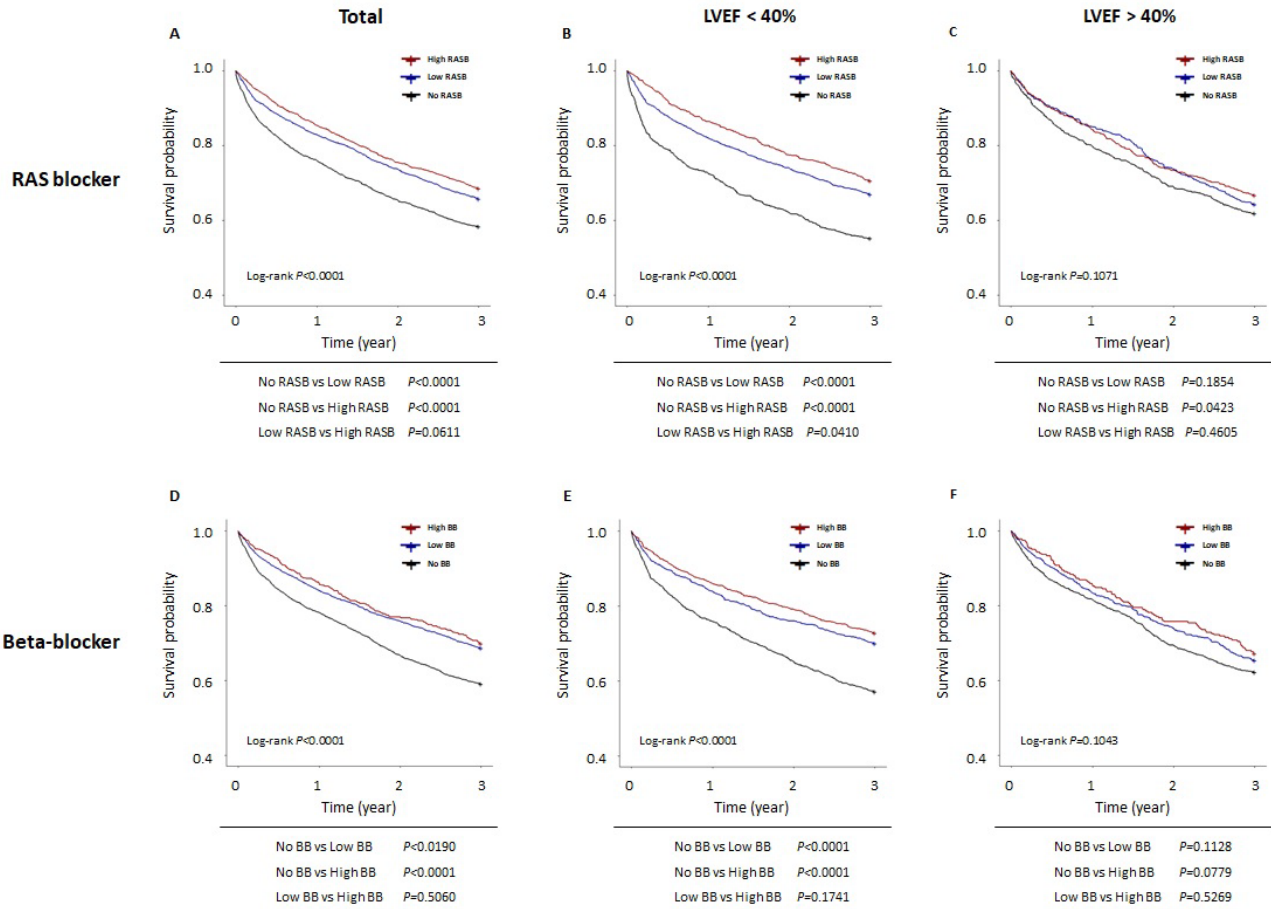
Body

Background: It remains unclear if patients with acute heart failure syndrome (AHFS) need to reach the maximally tolerated doses of renin-angiotensin system blockers (RASBs) or beta-blockers (BBs) to obtain a survival benefit. This study evaluated the dose-response relationship between RASBs or BBs and survival in AHFS patients.

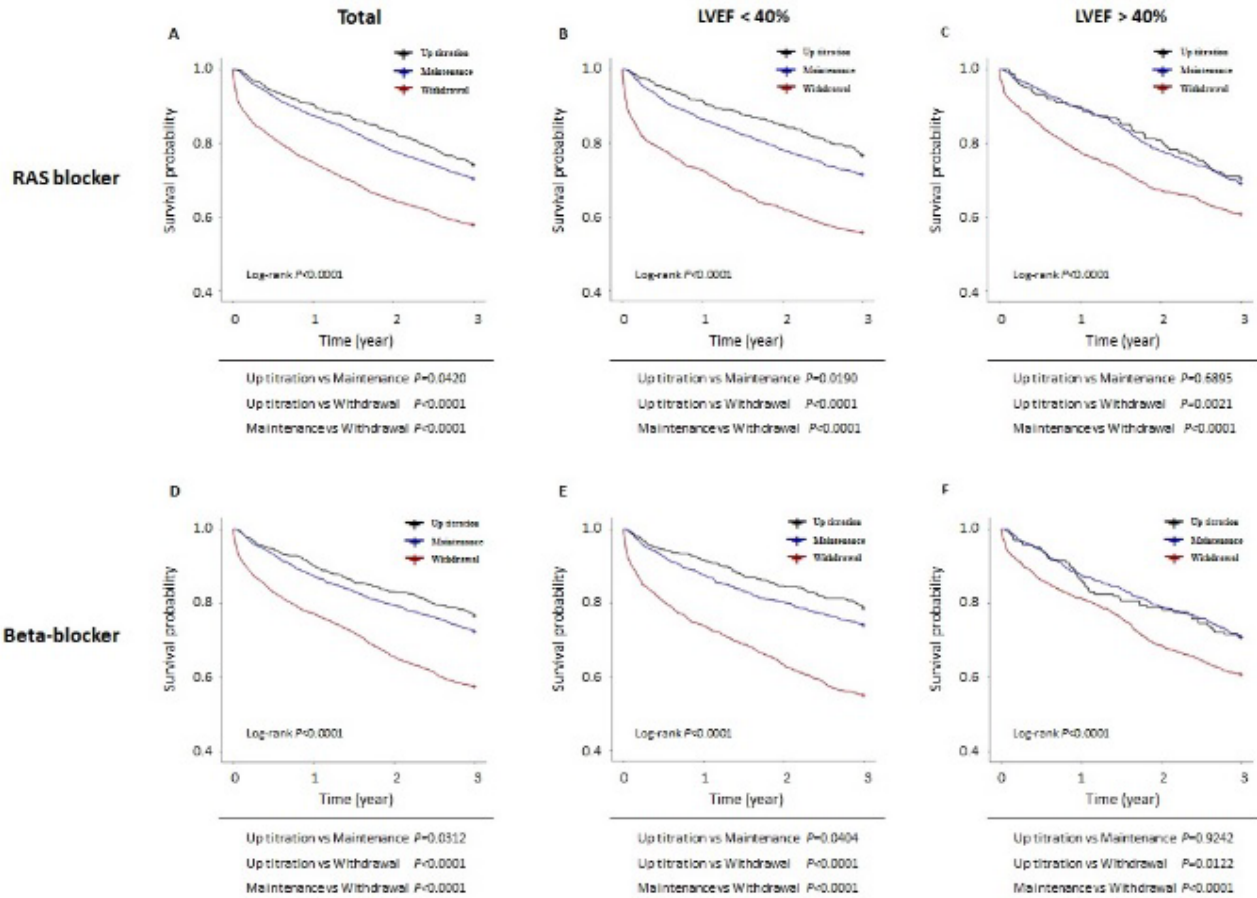
Methods: In total, 5,331 patients in the Korean Acute Heart Failure registry were analyzed based on the doses of RASBs and BBs at discharge. Also, an additional analysis of 4,613 patients with dosage information at the first post-discharge follow-up visit was done. Survival curves were constructed using the Kaplan-Meier method and compared using the log-rank test, and independent predictors of mortality were identified with the multivariable Cox proportional hazards model.

Results: In patients hospitalized with AHFS, RASB use at discharge was associated with a significant reduction in the risk of all-cause mortality. This effect was dose dependent for heart failure with reduced ejection fraction (HFrEF) but did not attain statistical significance for heart failure with preserved ejection fraction (HFpEF). BB use at discharge was associated with a reduction in all-cause mortality in HFrEF but not for HFpEF patients, although this was not dose dependent. At the first post-discharge follow-up visit, a significantly higher risk of all-cause mortality was associated with the maintenance or withdrawal of RASBs compared to up-titration of dose in HFrEF patients.

Conclusion: Using RASBs or BBs at discharge was associated with improved survival. A dose-response relationship between RASB and all-cause mortality was evident in AHFS patients with a reduced ejection fraction but not BBs. It is important to initiate and up-titrate RASBs to the maximally tolerated dose in AHFS patients during the transition period, especially for patients with a reduced ejection fraction.



Kaplan-Meier curve in AHFS patients according to RASB and BB dose at discharge, separately for no use (black line), low dose (blue line), and high dose (red line).
 RASB = renin-angiotensin system blocker; BB = beta-blocker.



Kaplan-Meier curve in AHFS patients according to RASB and BB dose change at first follow-up, separately for up titration (black line), maintenance (blue line), and withdrawal (red line)

Clinical Implications: My study will help enable cardiovascular clinicians to apply guideline-directed medical therapy in acute heart failure syndrome patients, especially those with reduced ejection fraction.